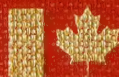


volume
2

Canadian Classification and Dictionary of Occupations 1971


OCCUPATIONAL
QUALIFICATION
REQUIREMENTS

3 1761 11767147 9



Manpower
and Immigration

Main-d'œuvre
et Immigration



Digitized by the Internet Archive
in 2023 with funding from
University of Toronto

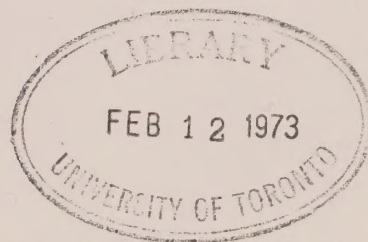
<https://archive.org/details/31761117671479>

CHI
MI
- CH 12

Canada, Dept. of Manpower and
Immigration

[General publications]

[G-2/1] Canadian classification and
dictionary of occupations 1971.
v. 2 - Occupational qualification
requirements. 1973. 933 p.



volume
2

Canadian Classification and Dictionary of Occupations 1971

OCCUPATIONAL
QUALIFICATION
REQUIREMENTS

PUBLISHED BY AUTHORITY
OF THE MINISTER
OF MANPOWER AND IMMIGRATION



Disponible en français
sous le titre:
"Classification canadienne
descriptives des professions 1971"



**Manpower
and Immigration**

**Main-d'œuvre
et Immigration**

© Crown Copyrights reserved

Available by mail from Information Canada, Ottawa,
and at the following Information Canada bookshops:

HALIFAX
1687 Barrington Street

MONTREAL
640 St. Catherine Street West

OTTAWA
171 Slater Street

TORONTO
221 Yonge Street

WINNIPEG
393 Portage Avenue

VANCOUVER
800 Granville Street

or through your bookseller

Price: \$10.00

Catalogue No. MP53-171/2

Price subject to change without notice

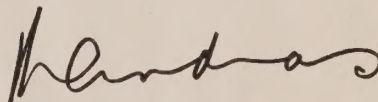
Information Canada
Ottawa, 1973



FOREWORD

With the publication of Volume I of the Canadian Classification and Dictionary of Occupations, Canada has acquired a national standard classification of occupations available in both the English and French languages. The wealth of data gathered for over 6700 occupational definitions has provided the foundation for further research leading to the development of a companion publication, Volume II — Occupational Qualification Requirements.

The main objective of Volume II is to provide a useful instrument for career counselling and placement. In this publication an attempt is made to delineate the qualifications required for successful performance of the work described in the occupational definitions of Volume I. This information should thus enable a user to relate an individual's qualifications to those required for a specific occupation.

A handwritten signature in black ink, appearing to read 'Andras', with a stylized flourish at the end.

Robert Andras,
Minister of Manpower and Immigration.

January 1973

ACKNOWLEDGEMENTS

This first edition of Occupational Qualification Requirements was produced by the Research Branch of the Program Development Service of the Department of Manpower and Immigration under the direction of J.E. Andoff.

Research studies and qualifications profiles were developed under the direction of R.A. Weeks. Training and entry requirements advice was provided by W. Coe. The remainder of each chapter was written and prepared for publication under the direction of F.F. Doherty.

The final page of this volume lists the names of those officers who made a substantial contribution to Volumes I and II. Although names of the clerical and typing support staff are not listed, their services and dedication are gratefully acknowledged.

The generous cooperation of many firms, professional associations, labour organizations and the advice and assistance of the Occupational Analysis Branch of the United States Department of Labour are also acknowledged.

TABLE OF CONTENTS

	Page No.
Introduction.....	ix
Characteristics of Volume II Data.....	xi
Special Occupational Arrangements.....	xix
Numerical List of Chapter and Group Titles.....	xxv
Alphabetical Index of Chapter and Group Titles	xxxvii
Qualification Requirements for Occupations	1
Guide to Qualifications Profile Factors	931
Acknowledgements — CCDO Officers	933

INTRODUCTION

Different occupations demand different aptitudes, interests, and temperaments as well as different levels of education and training. The kind and degree of aptitude possessed by a job seeker can be measured through the proper administration and interpretation of aptitude tests. Likewise, there are tests which are useful in determining the interests and temperaments of applicants or counselees. The task of relating an applicant's qualifications to occupational requirements, or counselling him in terms of the greatest likelihood of job success is facilitated through the use of test norms and critical scores.

The Department of Manpower and Immigration uses the General Aptitude Test Battery (GATB) to measure aptitudes found to be important in satisfactory job performance. Actual Canadian test norms, however, are not yet available except for a relatively small number of the thousands of occupations found in the Canadian economy. In the absence of standardized test results for these occupations, the Canadian Classification and Dictionary of Occupations (CCDO) Program sought a substitute method of indicating levels of aptitude required for satisfactory job performance. Over a period of five years, aided by a number of specialists in education, psychology and guidance counselling, studies have been conducted leading to the development of methods for arriving at meaningful aptitude, interest and temperament ratings for the occupations defined in Volume I of the CCDO. Systems were adopted for estimating these factors based partly on work done by the Functional Occupational Classification Project sponsored by the United States Employment Service (USES). The specialists employed by the USES developed various benchmark descriptions of occupations for each level of the different aptitude factors, using material from job and occupational analyses, and actual test-development studies. These specialists also defined categories of interest and temperaments related to occupational performance. The CCDO made use of its own Canadian occupational definitions and supporting data for comparative purposes and began to develop its own rating techniques and its own set of benchmarks.

The aptitude ratings found in the Qualification Profiles of Volume II reflect judgments, based on available data, as to the *average* level of aptitude required for satisfactory performance in an occupation. These ratings represent a broad band of possible scores within any given level. GATB test data, on the other hand, provide cutting or critical scores set at a point of differentiation between successful and unsuccessful workers, and are somewhat below the averages obtained for specific occupational samples. Since the CCDO aptitude ratings are averages for satisfactory performance in five broad levels of aptitude, they cannot have the same degree of preciseness that could be provided by test results of a group of workers in any given occupation. Until test results are actually ready, however, the CCDO aptitude estimates for individual or groups of occupations, along with other occupational qualification requirement ratings, will prove useful in career counselling and placement activities.

CHARACTERISTICS OF VOLUME II DATA

The Coding System

One of the outstanding features of the Canadian Classification and Dictionary of Occupations is the multipurpose nature of its design. The 23 major groups, 81 minor groups and 498 unit groups in Volume I provide a considerable degree of homogeneity for groups of occupations. Volume II essentially takes the CCDO occupational structure at the unit group level and develops these groups of occupations in such a way as to delineate the qualifications that are required of a worker for satisfactory performance of the work described in each group. With the exception of a number of special arrangements, the four-digit code numbers used in Volume I are used to introduce the same group of occupations in Volume II. This use of common code numbers forms the basis for a simple and effective cross-reference system.*

Presentation of Data

Volume I unit groups, which contain occupations that are homogeneous in terms of work performed, frequently become chapters in Volume II. A CHAPTER is primarily based on one or more homogeneous clusters of occupations. A CLUSTER consists of a number of occupations having the same or similar *significant* aptitude, interest and temperament ratings with similar levels of education and training. The chapter format contains narrative sections which explain the data contained in the qualifications profile(s). A QUALIFICATIONS PROFILE is simply a summary of the qualification

requirements for a cluster of occupations or in some instances a single occupation.

Volume I unit groups, which contain occupations that are somewhat heterogeneous in terms of work performed (usually residual groups), are designated simply as groups in Volume II. The GROUP format is easily recognized since each occupational title is listed with its own individual qualifications profile. A brief introductory statement on the work performed is the only narrative description found in the group format.

Chapter Format

Depending on the nature of the data, chapters consist of the following sections:

I	WORK PERFORMED
II	LIST OF OCCUPATIONAL TITLES
III	QUALIFICATIONS PROFILES
IV	APTITUDES AND CAPACITIES
V	TRAINING AND ENTRY REQUIREMENTS
VI	ADVANCEMENT AND TRANSFER POSSIBILITIES
VII	CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS
VIII	OTHER CLUES AND REQUIREMENTS

I WORK PERFORMED SECTION

This section introduces the reader to the variety of work performed in the occupations comprising the chapter. The order of appearance of the narrative data in the WORK PERFORMED SECTION is as follows:

- A. Lead Statement
- B. Worker Functions
- C. Work Activities

A. Lead Statement

The lead statement summarizes in general terms what the workers do, the material and equipment used, and products made or services rendered.

B. Worker Functions

The worker functions narrative expresses what the

workers' relationships are in terms of the Data, People, and Things concept used in the CCDO. A detailed explanation of this concept is contained on pages 1169-1171 of Volume I. The arrangement of the worker functions is based on their significance in the number of occupations forming the chapter. Their descriptions utilize key words from the actual definition of each individual worker function.

C. Work Activities

The work activities narrative provides added information on such subjects as work fields, materials and equipment, products made, services rendered or key duties involved in the occupations.

* Volume II was designed to be used in conjunction with Volume I of the CCDO. For this reason the reader should be thoroughly familiar with the characteristics of Volume I.

II LIST OF OCCUPATIONAL TITLES SECTION

Titles

The purpose of this section is to indicate the arrangement of the occupations within a chapter. In many cases, the base titles appear in a different order than in Volume I unit groups. The arrangement of occupations into clusters is clearly indicated by letters of the alphabet. *Related titles* shown in Volume I are omitted from this section since it is difficult to accurately rate occupations which have no definitions. *Alternate titles* shown in Volume I are also omitted since they stand for the same work performed as the base titles. *Seven-digit residual-group titles* are omitted since they cannot be rated for the factors normally assigned to base titles. Also, *dual occupational titles* involving the work of couples are not shown.

Transfers

Occasionally, occupations have been transferred from their original unit groups in Volume I because their qualifications requirements are similar to those of occupations in another chapter of Volume II. The transferred occupation is inserted into the List of Occupational Titles according to the complexity of education and training and bears its original seven-digit code number followed by the letter "T". The transfer of an occupation from its original unit group in Volume I is shown at the end of the List of Occupational Titles of the chapter from which it has been deleted through the use of abbreviation "N.B." followed by an explanation. The fol-

lowing partial List of Occupational Titles illustrates transfer actions:

		GED	SVP
8581-182	AUTOMOBILE WRECKER (motor vehicle)	3	4*
8581-184	GLASS INSTALLER (motor vehicle)	3	4
8511-122T	CLUTCH REBUILDER (motor vehicle)	3	3
8581-186	MUFFLER INSTALLER (motor vehicle)	2	4

N.B. Occupation 8581-130 SHOP ESTIMATOR (motor vehicle) has been transferred, for Volume II purposes, to Chapter 8586. INSPECTING AND TESTING OCCUPATIONS, EQUIPMENT REPAIR, N.E.C.

GED and SVP

Occasionally there will be changes in General Educational Development (GED) and Specific Vocational Preparation (SVP) ratings for Volume II purposes. These changes will be indicated on the List of Occupational Titles by an asterisk (*) which is placed after the appropriate GED or SVP digit. See the above illustration. The GED and SVP ratings will not normally be shown on the List of Occupational Titles for chapters dealing with supervisor or foreman occupations, since most of these occupations were not originally rated for GED or SVP in Volume I.

III QUALIFICATIONS PROFILE(S) SECTION

Categories of Data

The QUALIFICATIONS PROFILE is a method of summarizing the qualification requirements for a cluster of occupations or a single occupation in terms of aptitude levels, physical activities, environmental conditions, general educational development, specific vocational preparation and interest and temperament ratings. The following headings are used to introduce each category of data in the qualifications profiles.

Aptitudes PA EC GED SVP Ints. Temps.
G V N S P Q K F M E C

Each category of data shown in the qualifications profile is dealt with separately in the explanatory material that follows:

Aptitude Factors and Definitions

Over the years it has been demonstrated that certain aptitudes are important in job success. For CCDO purposes APTITUDES are defined as the specific capacity or potentiality required of an individual in order to facilitate the learning of the skills needed for a task or job duties. Eleven aptitude factors are used in estimating the level of aptitude required by an individual for *average, satisfactory work performance*.

G. Intelligence

General learning ability. The ability to "catch on"

or understand instructions and underlying principles. Ability to reason and make judgments.

V. Verbal

Ability to understand meanings of words and ideas associated with them, and to use them effectively. To comprehend language, to understand relationships between words and to understand meanings of whole sentences and paragraphs. To present information or ideas clearly.

N. Numerical

Ability to carry out arithmetic processes quickly and accurately.

S. Spatial

Ability to think, visually of geometric forms and to comprehend the two dimensional representation of three-dimensional objects. The ability to recognize the relationships resulting from the movement of objects in space. May be used in such tasks as blueprint reading and in solving geometry problems. Frequently described as the ability to "visualize" objects of two or three dimensions, or to think visually of geometric forms.

P. Form Perception

Ability to perceive pertinent detail in objects, or in pictorial or graphic material. To make visual comparisons and discriminations and see slight differences in

shapes and shadings of figures and widths and lengths of lines.

Q. Clerical Perception

Ability to perceive pertinent detail in verbal or tabular material. To observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation.

K. Motor Coordination

Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and quickly.

F. Finger Dexterity

Ability to move the fingers, and manipulate small objects with the fingers, rapidly or accurately.

M. Manual Dexterity

Ability to move the hands easily and skilfully. To work with the hands in placing and turning motions.

E. Eye-Hand-Foot Coordination

Ability to move the hand and foot coordinately with each other in accordance with visual stimuli. (Not measured by GATB.)

C. Colour Discrimination

Ability to perceive or recognize similarities or differences in colours, or in shades or other values of the same colour. To identify a particular colour, or to recognize harmonious or contrasting colour combinations, or to match colours accurately. (Not measured by GATB.)

Aptitude Rating System

The following scale is used:

Level

1. The highest 10% of the working population
2. The upper third, exclusive of the highest 10%
3. The middle third of the working population
4. The lowest third, exclusive of the lowest 10%
5. The lowest 10% of the working population.

Five levels are provided for each aptitude with the exception of Intelligence (G), which reflects only four levels. Although many jobs require no more Intelligence than that possessed by the lowest 10% of the working population, it is felt that reliable ratings cannot be made for that level of the Intelligence factor without actually testing individuals in the occupation.

Interpretation of Aptitude Ratings

A sample aptitude profile which would normally form part of an entire qualifications profile for a cluster of occupations is included here to aid the reader in understanding the explanatory material that follows:

Sample Aptitude Profile

G	V	N	S	P	Q	K	F	M	E	C
3	4	4	4	3	5	3	4	3	5	5
4	5	4	4	3					4	
										3

Significant Aptitudes

Aptitude Factor S-Spatial Perception has a single rating at Level 4. The underlining of an aptitude rating simply indicates that the aptitude is considered *significant* for satisfactory job performance. Aptitude Factor P-Form Perception is shown with two ratings, one is at Level 3 and the other at Level 4. Both levels of aptitude are shown as significant for satisfactory job performance and are necessary because of the range of occupations in a cluster.*

Multiple Ratings for Individual Aptitude Factors

Frequently there will be more than one rating shown under an aptitude factor. As the number and complexity of occupations in a cluster increase so the probability of two or more ratings for the same aptitude factor also increases. As a general rule, the first rating shown under the aptitude factor indicates that the *majority* of occupations in the cluster are at the level of the first rating. In the Sample Aptitude Profile the majority of occupations are at Level 3 for P-Form Perception, while the *minority* of occupations are at Level 4. In Aptitude Factor C-Colour Discrimination, there are three ratings with Level 3 appearing as the last. This last rating indicates that colour discrimination is considered significant for very few occupations in the cluster. These occupations would normally be identified separately in the narrative of the APTITUDES AND CAPACITIES SECTION immediately following the QUALIFICATIONS PROFILES SECTION.

Ranked Ratings

In the Sample Aptitude Profile, Aptitude Factor F-Finger Dexterity has two ratings which are not arranged in numerical order. The rating of Level 4 appears before the rating of Level 3. This arrangement of ratings is called **RANKING** in the CCDO and indicates that the majority of occupations are rated at Level 4 and the minority are at Level 3.

The last example illustrates why in Volume II one speaks of the majority of occupations always being in the first level with other levels signifying the ratings for a minority of occupations. *Therefore, the reader should not assume that the order of the ratings corresponds to the order of complexity shown in the title arrangement on the LIST OF OCCUPATIONAL TITLES.*

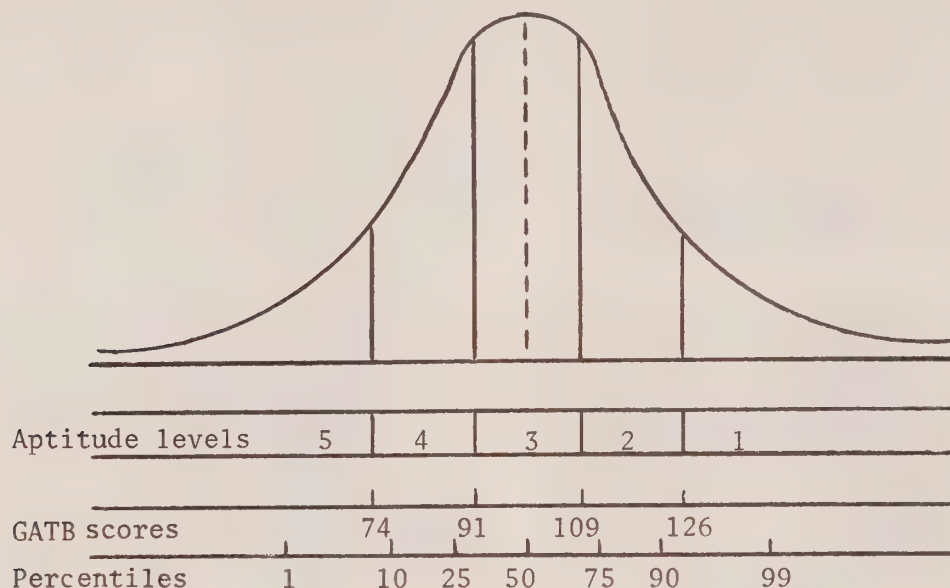
Arrangement of Multiple Clusters

In many chapters there will be more than one cluster. Each cluster of occupations has its own qualifications profile. These profiles are normally arranged within a chapter in a descending order of complexity in terms of aptitude requirements.

* Level 5 has been assigned when an occupational definition does not reveal the need for a particular aptitude or where an aptitude appears negligible. This procedure ensured the meaningfulness of Level 4 ratings.

Relationship of Levels to Scores

The aptitude levels shown in the qualifications profiles can be related to the scores obtained from the General Aptitude Test Battery (GATB). The individual aptitude test results from GATB are reported in standard scores. Using standard scores and percentile ranks (rarely used in GATB), the five levels can be shown graphically.



The relationship between CCDO aptitude levels, GATB aptitude scores, percentiles, and a hypothetical normal distribution with a mean of 100 and a standard deviation of 20.

Physical Activities and Environmental Conditions

In CCDO Volume I — CLASSIFICATION AND DEFINITIONS, most of the individual occupational definitions are rated for Physical Activities (PA) and Environmental Conditions (EC). These designations appear as code letters and digits directly above the occupational definitions.

In CCDO Volume II — OCCUPATIONAL QUALIFICATION REQUIREMENTS, these same designations appear in the qualifications profiles. In the case of a Volume II chapter with a single or multiple cluster arrangement the Physical Activity ratings indicate the physical capacities a worker must have to meet the requirements of occupations in a cluster. Likewise, the Environmental Conditions ratings indicate the conditions to which a worker must adapt in order to meet the requirements of the same cluster of occupations. An example of a profile for a chapter with two clusters is shown to aid the reader in the interpretation of the ratings.

Clusters	PA	EC
A	L-H 34567	I-B 57
	L-H 347	I-B 5
	B H 3456	B 56

The reader should exercise caution in making statistical inferences from this data. The CCDO ratings *should not* be used as cut-off points for rejection, or acceptance of individuals. However, these estimates provide generalizations of the levels of ability required in an occupation.

Interpretation of PA and EC Ratings

The PA and EC ratings for clusters are expressed as a range of ratings and are simply in the same order as they appear on a PA and EC table. In some cases, a cluster will have more than one set of ratings. In the example shown, Cluster A has two sets of PA ratings. As a general rule, the first set (L-H 34567) indicates the ratings for occupations found in the *upper half* of Cluster A, while the second set (L-H 347) indicates the ratings found in the *lower half* of Cluster A. If the reader wishes to find the exact PA or EC ratings for a particular title he simply locates its 7-digit code number on the LIST OF OCCUPATIONAL TITLES appearing before the qualifications profiles and locates the same 7-digit title in Volume I where the PA and EC ratings for individual occupations are found. In the Volume II "Group" treatment the PA and EC ratings are already shown opposite the individual occupational titles.

A detailed explanation of the code letters and digits for PA and EC ratings can be found in CCDO Volume I, pp. 1165-1168.

General Educational Development and Specific Vocational Preparation

In CCDO Volume I — CLASSIFICATION AND DEFINITIONS, most of the individual occupational definitions are also rated for General Educational Development

(GED) and Specific Vocational Preparation (SVP). These designations appear as digits directly above the occupational definitions.

Interpretation of Ratings

In CCDO Volume II — OCCUPATIONAL QUALIFICATION REQUIREMENTS, ratings for GED and SVP are presented in the qualifications profiles. In the Chapter format with a single or multiple cluster arrangement, GED ratings are normally shown as a *range*; for example, 4-3 (12 to 9 years of education). Likewise, SVP ratings are also shown in terms of a range; for example, 8-5 (over 4 years to over 6 months of training). In the Group format, however, there will normally be only one rating for GED and SVP respectively, since each occupation has its own qualifications profile. A detailed explanation of the digits used for GED and SVP ratings can be found in Volume I, pp. 1161-1163. A *different* interpretation of GED in terms of years of schooling is shown in the following table.

General Educational Development Table

Levels	Approximate Duration of Schooling
6.	17 years plus
5.	13 to 16 years
4.	11 to 12 years
3.	9 to 10 years
2.	7 to 8 years
1.	Up to and including 6 years

Specific Vocational Preparation Table

Levels

1. Short Demonstration only.
2. Anything beyond short demonstration up to and including 30 days.
3. Over 30 days up to and including 3 months.
4. Over 3 months up to and including 6 months.
5. Over 6 months up to and including 1 year.
6. Over 1 year up to and including 2 years.
7. Over 2 years up to and including 4 years.
8. Over 4 years up to and including 10 years.
9. Over 10 years.

Interest Factors and Definitions

Numerous studies in psychology have indicated that there is a significant correlation between job satisfaction and a positive interest in a type of work. For CCDO purposes an "interest" is defined as a tendency to become absorbed in an experience through concern in or attraction for certain types of work activities or experiences with accompanying rejection of contrary types of activities or experiences. There are five pairs of interest factors provided so that a positive concern for one factor of a pair usually implies rejection of the other factor of that pair.

The following table of interest factors is used:

1. Dealing with things and objects.	vs.	6. Dealing with people and communicating ideas.
2. Business contact with people.	vs.	7. Scientific and technical work.
3. Routine, concrete and organized work.	vs.	8. Abstract and creative work or experiences.
4. Working for people for their presumed good as in the social welfare sense, or for dealing with people and language in social situations.	vs.	9. Non-social work, carried on in relation to processes, machines, and techniques.
5. Work resulting in prestige or the esteem of others.	vs.	0. Work leading to satisfaction from tangible results.

Temperament Factors and Definitions

Different occupations call for different temperament traits just as they call for different aptitudes. For CCDO purposes "temperament" is defined as those personality qualities which remain fairly constant and reveal a person's characteristic response in terms of a preference, inclination, or disposition. The CCDO evaluates temperament traits through the use of twelve factors which are defined in terms of *work situations* which are thought to be indicative of the type of temperamental adjustment required or which require the worker to possess certain temperament qualities. The following list illustrates the work situations used:

1. A variety of duties often characterized by frequent change.
2. Repetitive or short-cycle operations carried out according to set procedures or sequences.
3. Doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.
4. The direction, control, and planning of an entire activity or the activities of others.
5. Dealing with people in actual job duties, beyond giving and receiving instructions.
6. Working alone and apart in physical isolation from others, although activity may be integrated with that of others.
7. Influencing people in their opinions, attitudes, or judgments about ideas or things.
8. Performing adequately under stress when confronted with the critical or unexpected or taking risks.
9. The evaluation (arriving at generalizations, judgments, or decisions) of information against sensory or judgmental criteria.
10. The evaluation (arriving at generalizations, judgments, or decisions) of information against measurable or verifiable criteria.
- X. The interpretation of feelings, ideas, or facts in terms of personal viewpoint.
- Y. The precise attainment of set limits, tolerances, or standards.

Interpretation of Interest and Temperament Ratings

A partial interests and temperaments profile for a chapter with three clusters is presented to aid the reader in the interpretation of the ratings.

Clusters	Ints.	Temps.
A	910	0Y1
	91	0Y
B	91	0Y
C	913	0Y2

Only the most significant interests and temperaments are rated for a cluster of occupations or in some cases a single occupation. These ratings are arranged in an order of significance and reflect an overall pattern for the occupations in a cluster. Individual occupations within a cluster may require a different order of significance, depending on the nature of the work performed. A minimum of two interest ratings is normally required for each cluster. In some cases, as in Cluster A, there will be two sets of interest or temperament ratings. As a general rule, the first set (910 and 0Y1) indicate the ratings for occupations found in the upper half of a cluster which normally have higher GED and SVP ratings while the second

set (91 and 0Y) indicates the ratings for occupations found in the lower half of the cluster which normally have lower GED and SVP ratings.

The reader will arrive at a better understanding of the occupations in a cluster by *viewing the interest and temperament ratings together since they are designed to complement each other*. The interest and temperament pattern for Cluster A is quite different from that shown for Cluster C. For example, Interest Factor 3 (routine and organized work) and Temperament Factor 2 (repetitive or short-cycle operations) presents an image of Cluster C which is not reflected in Clusters B or A. In Cluster A the Interest Factor 0 (tangible, productive satisfaction) and Temperament Factor 1 (variety of duties and frequent change) indicate a different pattern than that found in Cluster C, despite the common interest ratings of 91 and common temperament ratings of 0Y. This example illustrates the meaningfulness of clusters and alerts the counsellor to differences which he must consider when assessing the advancement possibilities or suitability of a client within the work area represented by the entire chapter.

In the "Group" format for occupations in Volume II, interest and temperament ratings are shown for each occupation. The differences between separate occupations are readily apparent.

IV APTITUDES AND CAPACITIES SECTION

Organization of Data

This section develops the aptitude ratings and capacities ratings (physical activities and environmental conditions) contained in the qualifications profile of a chapter.

A statement is developed for the significant aptitudes in the order of their appearance in the qualifications profile. In some instances, a single statement may describe more than one aptitude.

Aptitude Factor G-Intelligence is always described whether it is significant or not and illustrates the appropriate level of learning ability required. The statement usually embraces the level of complexity described in the related General Educational Development scale.

The examples used to illustrate a significant aptitude usually apply to the majority of occupations in the cluster being described. When there is an aptitude which is of considerable significance for only one or two occupations in a cluster it may be described separately. The reader should note that not all of the occupations in a cluster necessarily have all the requirements recorded in the qualification profiles. When in doubt the reader should refer to the occupational definition in Volume I for additional guidance.

When there are two or more profiles which show the same significant aptitude factors at similar levels and with similar capacities, these factors are generally described in common statements. When two or more clusters have numerous different significant aptitudes and capacities they are described separately for each cluster.

In order to avoid needless repetition, physical activity statements such as those for handling have frequently been

combined with aptitude statements for aptitude factors K, F or M. When a physical activity is not related to a significant aptitude it is described separately. Statements on environmental conditions are general and apply to the entire cluster although some statements have been prepared for conditions peculiar to one or two single occupations within a cluster.

The occupational definitions in CCDO Volume I generally describe in broad terms the duties of a variety of similar jobs found in many establishments. *The reader is cautioned not to consider these occupational definitions as job descriptions which apply specifically to a particular job in an establishment*. In some instances, the reader may have to mentally adjust certain aptitude ratings in the qualifications profile to coincide with the requirements of an establishment job. In CCDO Volume I, for example, an occupational definition for a production worker may receive a significant rating for form perception because there are duties involving visual inspections of finished products. In an actual plant situation an inspector may perform these duties which would reduce the significance of form perception for the production worker.

Many Volume I occupational definitions contain "may clauses" which appear as the last statements in a definition. These "may clauses" were not considered when the aptitude, interest and temperament ratings were established for an occupation. These clauses, however, may actually apply to a particular job in an establishment thus necessitating changes in the significant aptitude ratings. In CCDO Volume II, for example, occupation **8526-110 FINAL INSPECTOR, TRUCK TRAILER**, is rated at Level 5 for Aptitude Factor E (eye-hand-foot co-ordination). A "may clause" in the occupational definition itself, states that vehicles may be road tested. If this statement applies to an employer's requirements then

the rating should be adjusted to at least Level 3 and would be significant.

Special Treatment for Aptitude Factor C — Colour Discrimination

In some cases the reader does not know the precise interpretation of the physical activities rating of 7 (seeing) because it covers the following items:

- acuity far,
- acuity near, (often linked with Aptitude P)
- depth perception, (often linked with Aptitude S)
- accommodation
- field of vision
- colour vision (often linked to Aptitude C)

To assist the reader in interpreting the colour vision rating covered by PA7, Level 4 of Aptitude C has been used to indicate the presence of colour vision and Level 5 means that it is negligible or absent.

Colour vision is interpreted at Level 4 under Aptitude C to mean only the capacity to identify and distinguish basic colours such as red, blue, green or yellow.

Aptitude Factor C — *Colour Discrimination* begins, for CCDO purposes, at Level 3, where it means the ability to match colours, and distinguish different shades of the same colours.

Colour discrimination at levels 2 and 1 means the ability to recognize similarities or differences in colours, or in shades or other values of the same colour coupled with the ability to recognize harmonious or contrasting colour combinations and to match colours accurately.

In summary, the CCDO reserves levels 1-3 for colour discrimination, Level 4 for good colour vision and Level 5 as negligible or absent.

V TRAINING AND ENTRY REQUIREMENTS SECTION

Organization of Data

The purpose of this section is to amplify the General Educational Development (GED) and Specific Vocational Preparation (SVP) data shown in the qualifications profiles and to alert the reader to the existence of certain requirements such as licensing, certification or registration which may exist for a number of occupations in the chapter. The usual methods of entry are outlined but may be subject to Collective Agreements between the employer and union or trade association. Occasionally entry may be regulated by a fixed proportion between learners or apprentices and the qualified journeymen. The statements in this section are of a general nature, since in many instances, the requirements vary from province to province. The statements usually cover a number of occupa-

tions in a cluster and therefore cannot be too specific for any particular occupation. The reader should supplement his knowledge of the training and entry requirements for specific occupations by obtaining appropriate career publications covering provincial requirements for individual occupations.

Normally the training and entry requirements data is dealt with separately for each cluster of occupations. The required body of knowledge is briefly indicated as well as training programs, licensing, certification, registration and experience. At times the occupational knowledge required may be covered in more detail in the description of Aptitude Factor G — Intelligence, in the APTITUDES AND CAPACITIES SECTION.

VI ADVANCEMENT AND TRANSFER POSSIBILITIES SECTION

Organization of Data

The purpose of this section is to give examples of advancement and transfer possibilities for *occupations* classified in CCDO Volume I. Whether or not an *individual* can advance or transfer depends on his own abilities, personality, policies of the establishment, collective agreements and many other factors. Advancement and transfer possibilities are dealt with separately for each cluster shown in the QUALIFICATIONS PROFILE SECTION. Where it is advantageous, there are statements that are common to more than one cluster.

Advancement

Advancement, for CCDO purposes, means being raised in position, rank, class or grade within the particular occupational field. It includes a higher level of responsibility with increased skills, where remuneration is usually increased; for example,

Typist 2 to Typist 3

Tool-and-Die Maker to Tool Design Technician

Welder Arc to Welder, Combination, Welding Technician or

Welding Foreman

Advancement data is given only in the broadest of terms because this type of movement depends almost entirely on the policy of the establishment.

In using the data in this section the reader should first have read the Volume I definition of the occupation under consideration before reading the qualifications profiles for other occupations in the same or other chapters.

Transfers

Transfer for CCDO purposes, means moving from one occupation to another occupation in related or different fields of work, where skills and knowledges learned in the first occupation can be applied *without the need of extensive training*. Transfers do not necessarily have to be at the same level of salary. For

example, an unemployed chemical engineer who has been working with polymers may transfer to work with textiles; or a tool and die maker may do the work of a machinist. A welder could become a welding equipment salesman or a welding inspector, if he has the required aptitudes, interests, temperaments, further training and certification.

The emphasis in the narrative description on transfer possibilities is on *transfer from occupation to occupation* regardless of the type of establishment or industry. When transfer possibilities are limited this is stated. It cannot be assumed that a person will be given

credit toward particular apprenticeship requirements if he has been engaged in a similar or related type of work. For example, if a person has worked as a make-up man in a printing shop, it may be wrong to assume that his time will be credited toward an apprenticeship program for compositors. The minimum acceptable educational requirements must be considered when suggesting advancement and transfer possibilities from occupations in one cluster to occupations in another cluster or even within the same cluster. Transfers are often limited to other occupations in the same cluster because of the specialized nature of the work.

VII CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS SECTION

Organization of Data

This section elaborates, where necessary, on the interest and temperament ratings shown in the qualifications profiles. Examples are used to illustrate the interest and temperament ratings when their significance is not readily apparent. The examples used generally apply to most of the occupations in a cluster. In some instances examples are not given because they have been implied in other sections of the chapter such as the WORK PERFORMED SECTION, which often gives examples of situations, and things or objects which do not need to be repeated.

The following special statement has been designed to encourage the reader to read the interest and temperament factors *together* for each cluster:

"Persons seeking entry to occupations in these clusters require *significant interests in*, and *dispositions for* work involving the following:"

Although this statement appears only once at the head of the section it introduces the descriptions of the interest and temperament factors for each cluster in a chapter.

When a chapter has only one cluster the generic name of the occupations frequently replaces the expressions "occupations in these clusters" or "occupations in this chapter."

Special Interpretations of Interest and Temperament Ratings

Once the reader is familiar with the principle of read-

ing the interests and temperaments together certain distinct patterns should be apparent.

Occupations with relatively low GED and SVP ratings are frequently assigned Interest Factor 3 (routine, concrete and organized work) and are usually accompanied by Temperament Factor 2 (repetitive and short cycle operations....) and/or Temperament Factor 3 (working under specific instructions....). The following example illustrates this pattern:

Occupational Title	GED	SVP	Ints.	Temps.
8211-194 GRAIN-CLEANER HELPER	2	2	13	23

Clerical occupations are frequently assigned Interest Factor 3 and may or may not be accompanied by Temperament Factors 2 and 3. When the latter temperament factors have not been assigned, Interest Factor 3 is interpreted with an *emphasis on computational and clerical detail requiring a substantial body of knowledge* as reflected in medium level GED and SVP ratings. The following example illustrates this pattern:

Occupational Title	GED	SVP	Ints.	Temps.
4161-110 MEDICAL-RECORD LIBRARIAN	4	5	3	0Y5

In this example Interest Factor 3 stresses the "concrete and organized nature" or computational or clerical detail of the work while the "routine" aspect has been dropped.

VIII OTHER CLUES AND REQUIREMENTS SECTION

Organization of Data

This section provides the reader with useful additional information which could not be properly expressed under other sections of the chapter. This information was gathered by the CCDO staff during the course of their studies and is not directly related to the data shown in the qualifications profiles. This section is only included in a chapter when additional data was available.

In an individual's background there are frequently work or "non-work" experiences indicating other interests which are not expressed in the ten interest factors used in the CCDO. These other interests or experiences are described under the sub-title "OTHER CLUES."

Some employers have special requirements which are not related to the CCDO concept of qualifications requirements, for example, a desired body height or weight, good grooming and self-confidence. Those requirements, often important to an employer, may be described under the sub-title "OTHER REQUIREMENTS."

When the data shown in this part of the chapter is really limited to only one sub-section, the sub-title itself becomes the title of the section. For example, the section title "OTHER CLUES AND REQUIREMENTS" could be replaced by the headings "OTHER CLUES" or in some instances "OTHER REQUIREMENTS."

SPECIAL OCCUPATIONAL ARRANGEMENTS

Categories of Special Arrangements

In order to prepare meaningful qualifications profiles for Volume II, it was necessary and advantageous to make a limited number of special occupational arrangements within the Volume I classification structure. These special occupational arrangements normally appear as chapters with distinct code numbers, and generally fall into the following three basic categories:

- I Chapters resulting from the *combination* of Volume I unit groups within minor groups or within major groups;
- II Chapters resulting from the *division* of Volume I unit groups into two or more chapters;
- III Chapters and Groups resulting from the *restructuring* of Volume I residual unit groups or other unit groups.

During the preparation of Volume II it was also necessary to omit certain unit groups found in Volume I. The following is a list of these unit groups with reasons for their omission from Volume II:

Volume I Unit Groups

Reasons for Omission

1111

No specific qualifications requirements established.

2739

Consist only of 7 digit-residual group definitions which cannot be rated for the same factors as occupations.

7519

9539

9918

9919

3133

Used only for Census purposes and have no occupational definitions.

6116

6117

8396

Occupations transferred to unit groups 8596 and 8399.

8528

Occupations transferred to Unit Group 8598 since there were too few occupations to warrant a separate chapter.

8546

Occupations transferred to Unit Groups 8536 and 8596.

8738

Occupations transferred to Unit Group 8798 since there were too few occupations for a separate chapter.

Category I – Combined Unit Groups

Chapters that have been developed from a combination of unit groups within minor or major groups of Volume I are usually identified by three digits or six digits and in some cases may be accompanied by a letter of the alphabet. Special occupational arrangements in this category are shown under the following headings:

SPECIAL OCCUPATIONAL ARRANGEMENT

CHAPTERS CREATED

A	MIDDLE MANAGEMENT OCCUPATIONS	113/114	OTHER MANAGERS AND ADMINISTRATORS
B.	ENGINEERING OCCUPATIONS	214/215A	RESEARCH, DESIGN AND DEVELOPMENT ENGINEERS
		214/215B	PRODUCTION, CONSTRUCTION, INSTALLATION, OPERATION AND MAINTENANCE ENGINEERS
		214/215C	INDUSTRIAL AND ENVIRONMENTAL ENGINEERS

C	SUPERVISORY OCCUPATIONS	410	CLERICAL SUPERVISORS
		510	MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS
		610	MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS
D	FOREMEN OCCUPATIONS	990	FOREMEN OCCUPATIONS
E	FARMERS	711A	FARMERS
		711B	BREEDERS, SMALL DOMESTIC ANIMALS

A. Middle Management Occupations

In CCDO Volume I, middle-management occupations common to government and private industry are classified within unit groups 1131-1149. As defined in Volume I, these managers “plan, organize, direct and control the activities of a department, product division, program, regional office or other unit of an industrial, commercial, or other establishment or organization, through subordinate managers, supervisors and other workers.”

CCDO occupational research studies have established that there are managerial functions which appear to be required of managers regardless of the area of specialization. Most of these functions can be performed without a highly detailed knowledge of an area of specialization. Many managers and administrators who “get things done” through supervisors and their subordinates appear to require common significant aptitude, interests and temperaments for successful performance. There is, however, a degree of variation in the levels of aptitude required, number of significant interests and temperaments and a range of general educational development and specific vocational preparation which depends on the specializations. The CCDO recognizes that there are essential qualities possessed by managers which would be overlooked by simply expanding on the data contained in the qualifications profiles. These qualities are nevertheless described in the section of the chapter entitled “OTHER REQUIREMENTS”.

For Volume II purposes, it was decided to combine the unit groups for middle-management occupations into a single chapter entitled **113/114 OTHER MANAGERS AND ADMINISTRATORS**. This chapter does not cover occupations in Chapter 1130, General Managers and Other Senior Officials. A single qualifications profile applies to the entire minor group of managers and administrators classified in Volume I. This profile must be judiciously interpreted by a reader who understands the variations in the managerial specialties of each separate unit group. These variations are apparent in the occupational definitions themselves. The qualifications profile for Chapter 113/114 is presented here to help the reader understand the explanatory material for middle-management occupations.

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>2</u>	4	4	<u>3</u>	4	4	4	5	5		S 567	I	6-4	9-6	265	457901
<u>1</u>	<u>1</u>	<u>3</u>	3	3						4							

B. Engineering Occupations

In CCDO Volume I, engineers are classified largely by discipline within unit groups 2142-2159. As defined in Volume I these engineers are concerned with “designing and supervising the construction of buildings and other structures; conducting research, advising on, planning, designing, developing and supervising the manufacturing, testing, installing, operating, or maintenance of machines, instruments, facilities, processes and services”.

Engineering occupations concerned with research, design and development appear to have similar individual qualifications profiles as do engineering occupations concerned with production, construction, installation, operation and maintenance. Industrial and environmental engineers also appear to have similar qualifications profiles. Despite their initial training in a particular engineering discipline many engineers seem to be employed in work which is *functionally* orientated.

For Volume II purposes, it was decided to create three separate chapters organized along functional lines which would have code numbers indicating the combination of occupations from various engineering unit groups. The functional arrangement does away with residual unit group 2159. Each chapter has its own qualifications profile with the functional nature of the occupations being explained in the Work Performed Sections. The three chapter titles with qualifications profiles are presented here to help the reader interpret this explanatory material.

214/215A RESEARCH, DESIGN AND DEVELOPMENT ENGINEERS

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>	4	4	4	4	5	5		L 4567	I-B 6	6	8	78	0Y495
									4	4							

214/215B PRODUCTION, CONSTRUCTION, INSTALLATION, OPERATION AND MAINTENANCE ENGINEERS

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	4	4	4	4	5	4		L 4567	B 6	5	8	79	Y045
<u>1</u>	<u>1</u>	<u>1</u>		<u>3</u>	3				4	5							

214/215C INDUSTRIAL AND ENVIRONMENTAL ENGINEERS

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>3</u>	4	4	4	4	5	4		S-L 567	I 67	5	8	796	Y09754
<u>1</u>	<u>1</u>	<u>1</u>		<u>2</u>	3					5							

C. Supervisory Occupations

In CCDO Volume I, for many supervisory occupations, there are special four-digit unit groups (2160 through 6190) ending in zero. Most of these supervisor definitions refer to the master definition 01-180 MANAGING SUPERVISOR (any ind.), or the master definition 01-250 SUPERVISOR/FOREMAN (any ind.). By definition, managing supervisors “plan, organize, direct and control the operations of an establishment engaged in retail or wholesale trade, or in providing services to the public, to business or other organizations, on own or owner’s behalf or in partnership, and supervise and co-ordinate activities of subordinate workers.” Supervisors, on the other hand, “supervise and co-ordinate activities of workers engaged in one or more occupations.” In Volume I many supervisor occupational definitions were not assigned GED, SVP, PA or EC ratings because of a special classification treatment given supervisory occupations. There are some supervisory occupations which are not part of this special treatment, but are classified in the same unit group as their workers. In Volume II, however, they are treated as a separate cluster in the same chapter which describes the qualification requirements of the workers.

Research studies were conducted to determine the best method of treating supervisory occupations in Volume II which are classified in their own special four-digit unit groups in Volume I. Typical chapters were prepared for some supervisory occupations but clerical, sales and services supervisory occupations were treated in special chapters.

The unit groups for clerical supervisors (4110 through 4190) were combined to form Chapter **410 CLERICAL SUPERVISORS** with a single qualifications profile as illustrated:

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5		S-L 56	I	5-3	7-5	25	450
<u>2</u>		<u>3</u>								4							

The unit groups for sales supervisory occupations (5130 though 5190) were combined to form Chapter **510 MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS**, with two different qualifications profiles as illustrated:

Managing Supervisors

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5		S-L 56	I	5-4	8-6	256	45091
	<u>3</u>	<u>2</u>	3														

Supervisors

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5		S-L 56	I	5-3	7-5	25	45
<u>2</u>	<u>2</u>	<u>2</u>								4							

The unit groups for services supervisory occupations (6120 through 6190) were combined to form Chapter **610 MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS**, with two different qualifications profiles as illustrated:

Managing Supervisors

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5		S-L 56	I-B	5-3	7-6	25	4591
<u>2</u>	<u>2</u>	<u>4</u>															

Supervisors

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	4	4	4	<u>4</u>	4	4	4	5	5		L 456	I-B	4-3	8-5	25	45
										4							

D. Foremen Occupations

In CCDO Volume I, for many foremen occupations, there are special four-digit unit groups (7180 through 9910) ending in zero. Foremen definitions usually refer to the master definition 01-250 SUPERVISOR/FOREMAN (any ind.). These occupations are concerned with “supervising and co-ordinating activities of workers engaged in one or more occupations.” In Volume I the majority of foremen occupations were not assigned GED, SVP, PA, or EC ratings because of the special type of occupational title and definition that was developed for classification purposes. There are some occupations with foremen’s duties which do not form part of this special arrangement. They are, however, usually treated separately in the same chapters which describe the qualifications requirements of their workers.

Occupational research studies were conducted to determine the most appropriate method of presenting qualifications profiles for these foremen occupations classified in their own special four-digit unit groups in Volume I. As a result of these studies, a single Chapter 990, FOREMEN OCCUPATIONS was prepared which develops the *functional concept* of “administrative types” of foremen who are not usually engaged in their workers’ duties and “working types” of foremen who perform some or all of the duties of their workers. The two qualifications profiles which resulted have to be carefully interpreted against an understanding of the *variations* contained in each foremen occupation classified in Volume I. This functional treatment of foremen occupations is illustrated in the qualifications profiles which follow:

Administrative Foremen

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	4	<u>3</u>	4	4	4	4	4	5	5		S-M 567	I-B 34567	5-3	8-5	59	4501
<u>2</u>		3	4	3	3				4	4							

Working Foremen

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	4		L-H 234567	I-B 34567	5-3	8-5	95	4501Y
<u>2</u>		4	<u>2</u>	<u>2</u>	3	<u>4</u>	<u>3</u>	<u>4</u>	5	5							
									3	3							

It is apparent that the order of the interests for each functional arrangement is not the same. The emphasis is on Interest Factor 5 (work resulting in prestige or esteem of others) for the administrative foreman whereas it is on Interest Factor 9 (non-social work, carried on in relation to processes, machines and technique) for the working foreman. Interest Factor 2 (business contact with people) is not shown for either arrangement as might be expected since this interest factor is better explained by the Temperament Factors of 4 (the direction, control, and planning of an entire activity or the activities of others) and 5 (dealing with people in actual job duties beyond giving and receiving instructions).

E. FARMERS

In CCDO Volume I, farmers are classified in unit groups 7111 GENERAL FARMERS, 7113 ANIMAL FARMERS, and 7115 CROP FARMERS. A study of the ratings for individual occupations in all three unit groups revealed that there was a considerable degree of commonality in the qualification requirements. There were however, some occupations concerned with

breeding small domestic animals which had slight variations in qualification requirements. These observations led to a combination of all three unit groups into Chapter 711A, **FARMERS** and Chapter 711B **BREEDERS, SMALL DOMESTIC ANIMALS**.

Category II – Divided Unit Groups

Chapters that have been developed from a division of unit groups within a minor group of Volume I are usually identified by four digits and an accompanying letter of the alphabet. These divisions of unit groups are designed to produce meaningful qualifications profiles in Volume II. An example of a special occupational arrangement in this category follows:

<i>Chapters</i>	<i>Chapter Titles</i>
8155 A	FORMING OCCUPATIONS, CLAY
8155 B	FORMING OCCUPATIONS, GLASS
8155 C	FORMING OCCUPATIONS, STONE

Category III – Restructured Unit Groups

Chapters and groups which result from the development of meaningful clusters from Volume I residual unit groups are identified by four digits and an accompanying letter of the alphabet. Where it was not possible to cluster occupations in a residual unit group, the same four digit code number used in Volume I will also appear in Volume II. Some unit groups in Volume I have been given the Group treatment in Volume II, i.e., they have been treated as residual groups because of considerable variations in qualification requirements which were not originally reflected in the broader concept of work performed used in Volume I. An example of a Volume I *residual unit group* that has been restructured into separate chapters with an accompanying group treatment as well, is shown in the following illustrations:

<i>Chapter Treatment</i>	<i>Chapter Titles</i>
8799 A	ELEVATOR INSTALLERS AND REPAIRMEN
8799 B	FURNACE INSTALLERS AND REPAIRMEN
8799 C	COMMERCIAL AND INDUSTRIAL AIR-CONDITIONING AND REFRIGERATION MECHANICS
8799 D	FLOOR SURFACERS

<i>Group Treatment</i>	<i>Group Title</i>
8799 E	OTHER CONSTRUCTION TRADE OCCUPATIONS, N.E.C.

An example of a Volume I *unit group* that has been restructured into a separate chapter with an accompanying group treatment is also shown:

<i>Chapter Treatment</i>	<i>Chapter Title</i>
3315 A	PHOTOGRAPHERS AND CAMERAMEN
<i>Group Treatment</i>	<i>Group Title</i>
3315 B	OTHER PHOTOGRAPHERS AND CAMERAMEN

Treatment of Labourers and Elemental Workers

Although there are many similarities between ratings in the qualifications profiles for labouring and elemental worker chapters they were not combined into a single chapter. Instead, most profiles are presented in separate chapters to maintain recognized promotional patterns within Volume I minor or major groups, and to preserve meaningful data such as environmental conditions, health certificates, driver's licences, and employment practices.

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

1113	Government Administrators
1115	Postmasters
1116	Inspectors and Regulatory Officers, Government
1119	Officials and Administrators Unique to Government, n.e.c.
1130	General Managers and Other Senior Officials
113/114	Other Managers and Administrators (except Chapter 1130)
1171	Accountants, Auditors and Other Financial Officers
1173	Organization and Methods Analysts
1174	Personnel and Related Officers
1175	Purchasing Officers and Buyers, Except Wholesales and Retail Trade
1176	Inspectors and Regulatory Officers, Non-Government
1179	Occupations Related to Management and Administration, n.e.c.
2111	Chemists
2112	Geologists and Related Occupations
2113	Physicists
2114	Meteorologists
2117	Physical Sciences Technologists and Technicians
2119	Occupations in Physical Sciences, n.e.c.
2131	Agriculturists and Related Scientists
2133	Biologists and Related Scientists
2135	Life Sciences Technologists and Technicians
2139	Occupations in Life Sciences, n.e.c.
2141	Architects
214/215A	Research, Design and Development Engineers (except Chapter 2141)
214/215B	Production, Construction, Installation, Operation and Maintenance Engineers (except Chapter 2141)
214/215C	Industrial and Environmental Engineers (except Chapter 2141)
2160	Supervisors, Other Occupations in Architecture and Engineering
2161	Surveyors
2163	Draughtsmen
2165	Architectural and Engineering Technologists and Technicians
2169	Other Occupations in Architecture and Engineering, n.e.c.
2181	Mathematicians, Statisticians and Actuaries
2183	Systems Analysts, Computer Programmers and Related Occupations
2189	Occupations in Mathematics, Statistics, Systems Analysis and Related Fields, n.e.c.
2311	Economists
2313	Sociologists, Anthropologists and Related Social Scientists
2315	Psychologists

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

2319	Occupations in Social Sciences, n.e.c.
2331	Social Workers
2333A	Occupations in Community and Recreational Services
2333B	Social-Services Assistants
2339	Occupations in Social Work and Related Fields, n.e.c.
2341	Judges and Magistrates
2343	Lawyers and Notaries
2349	Occupations in Law and Jurisprudence, n.e.c.
2350	Supervisors: Occupations in Library, Museum and Archival Sciences
2351	Librarians and Archivists
2353	Technicians in Library, Museum and Archival Sciences
2359	Occupations in Library, Museum and Archival Sciences, n.e.c.
2391	Educational and Vocational Counsellors
2399	Other Occupations in Social Sciences and Related Fields, n.e.c.
2511	Ministers of Religion
2519	Occupations in Religion, n.e.c.
2711	University Teachers
2719	University Teaching and Related Occupations, n.e.c.
2731	Elementary and Kindergarten Teachers
2733	Secondary School Teachers
2791	Community College and Vocational School Teachers
2792	Fine Arts Teachers
2793	Post-Secondary School Teachers, n.e.c.
2795	Teachers of Exceptional Students, n.e.c.
2797A	Flying Instructors
2797B	Instructors and Training Officers, n.e.c.
2799	Other Teaching and Related Occupations, n.e.c.
3111	Physicians and Surgeons
3113	Dentists
3115	Veterinarians
3117	Osteopaths and Chiropractors
3119	Health Diagnosing and Treating Occupations, n.e.c.
3130	Supervisors, Nursing Occupations
3131	Nurses, Graduate, Except Supervisors
3134	Nursing Assistants
3135	Nursing Aides and Orderlies
3137	Physiotherapists, Occupational and Other Therapists
3139	Nursing, Therapy and Related Assisting Occupations, n.e.c.
3151	Pharmacists
3152	Dietitians and Nutritionists
3153	Optometrists

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

3154	Dispensing Opticians
3155	Radiological Technologists and Technicians
3156	Medical Laboratory Technologists and Technicians
3157	Dental Hygienists, Assistants and Technicians
3159	Other Occupations in Medicine and Health, n.e.c.
3311	Painters, Sculptors and Related Artists
3313	Product and Interior Designers
3314	Advertising and Illustrating Artists
3315A	Photographers and Cameramen
3315B	Other Photographers and Cameramen
3319	Occupations in Fine and Commercial Art, Photography and Related Fields, n.e.c.
3330	Producers and Directors, Performing and Audiovisual Arts
3332A	Conductors and Instrumentalists
3332B	Choirmasters and Singers
3332C	Composers, Arrangers and Related Occupations
3333	Choreographers and Dancers
3335	Actors
3337	Radio and Television Announcers
3339	Occupations in Performing and Audiovisual Arts, n.e.c.
3351	Writers and Editors, Publication
3353	Writers and Editors: Radio, Television, Theatre and Motion Pictures
3355	Translators and Interpreters
✓ 3359	Occupations in Writing, n.e.c.
3710	Coaches, Trainers, Instructors and Managers, Sport and Recreation
3711	Referees and Related Officials
3713	Athletes
3715	Attendants, Sport and Recreation
3719	Occupations in Sport and Recreation, n.e.c.
410	Clerical Supervisors (includes 4110, 4130, 4140, 4150, 4160, 4170, 4190)
4111	Secretaries and Stenographers
4113	Typists and Clerk-Typists
4131	Bookkeepers and Accounting Clerks
4133	Tellers and Cashiers
4135	Insurance, Bank and Other Finance Clerks
4137	Statistical Clerks
4139	Bookkeeping, Account-Recording and Related Occupations, n.e.c.
4141	Office Machine Operators
4143	Electronic Data-Processing Equipment Operators
4151	Production Clerks
4153	Shipping and Receiving Clerks
4155	Stock Clerks and Related Occupations

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

4157	Weighers
4159	Material Recording, Scheduling and Distributing Occupations, n.e.c.
4161A	Medical-Record Librarians
4161B	Library and File Clerks
4169	Library, File and Correspondence Clerks and Related Occupations, n.e.c.
4171	Receptionists and Information Clerks
4172	Mail Carriers
4173	Mail and Postal Clerks
4175	Telephone Operators
4177	Messengers
4179	Reception, Information, Mail and Message Distribution Occupations, n.e.c.
4191	Collectors
4192	Adjusters, Claim
4193	Travel Clerks, Ticket, Station and Freight Agents
4194	Hotel Clerks
4195	Personnel Clerks
4197	General Office Clerks
4199	Other Clerical and Related Occupations, n.e.c.
510	Managing Supervisors and Supervisors, Sales Occupations (includes 5130, 5170, 5190)
5131	Technical Salesmen and Related Advisers
5133	Commercial Travellers
5135	Salesmen and Salespersons, Commodities, n.e.c.
5137	Sales Clerks, Commodities
5141	Street Vendors and Door-to-Door Salesmen
5143	Newsboys
5145	Service Station Attendants
5149	Sales Occupations, Commodities, n.e.c.
5171	Insurance Salesmen and Agents
5172	Real Estate Salesmen
5173	Salesmen and Traders, Securities
5174	Advertising Salesmen
5177	Business Services Salesmen
5179	Sales Occupations: Services, n.e.c.
5191	Buyers, Wholesale and Retail Trade
5193	Driver-Salesmen
5199	Other Sales Occupations, n.e.c.
610	Managing Supervisors and Supervisors, Service Occupations (includes 6120, 6130, 6160, 6190)
6111	Fire-Fighting Occupations
6112	Policemen and Detectives, Government
6113	Policemen and Investigators, Private

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

6115A	Correctional Officers and Matrons
6115B	Guards and Watchmen
6119	Protective Service Occupations, n.e.c.
6121	Chefs and Cooks
6123	Bartenders
6125	Waiters, Hostesses and Stewards, Food and Beverage
6129	Food and Beverage Preparation and Related Service Occupations, n.e.c.
6133	Chambermaids and Housemen
6135	Sleeping-Car and Baggage Porters, and Bellmen
6139	Occupations in Lodging and Other Accommodation, n.e.c.
6141	Funeral Directors, Embalmers and Related Occupations
6143	Barbers, Hairdressers and Related Occupations
6144	Guides
6145	Hostesses and Stewards, Except Food and Beverage
6147	Babysitters
6149	Personal Service Occupations, n.e.c.
6161	Laundering Occupations
6163	Dry-Cleaning Occupations
6165	Pressing Occupations
6169	Apparel and Furnishings Service Occupations, n.e.c.
6191	Janitors, Charworkers and Cleaners
6193	Elevator-Operating Occupations
6198	Occupations in Labouring and Other Elemental Work, Services
6199	Other Service Occupations, n.e.c.
711A	Farmers
711B	Breeders, Small Domestic Animals
7131	Farm Management Occupations
7181	General Workers, Farm
7183	Field Crop and Vegetable-Growing Workers
7185	Orchard, Vineyard and Related Tree and Shrub-Crop Workers
7187A	Horsemen
7187B	Livestock Workers
7191	Dairy Workers, Farm
7193	Poultry Workers, Farm
7195	Nursery and Related Workers
7197	Farm-Machinery Operators and Custom Operators
7198	Occupations in Labouring and Other Elemental Work: Farming, Horticulture and Animal Husbandry
7199A	Animal Care Occupations, n.e.c.
7199B	Other Farming, Horticultural and Animal-Husbandry Occupations, n.e.c.
7311	Captains and Other Officers, Fishing Vessels
7313	Fishermen: Net, Trap and Line

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

7315	Hunting, Trapping and Related Occupations
7319	Fishing, Hunting, Trapping and Related Occupations, n.e.c.
7511	Forestry Conservation Occupations
7513	Timber Cutting and Related Occupations
7516	Log Inspecting, Grading, Scaling and Related Occupations
7517	Log Hoisting, Sorting, Moving and Related Occupations
7518	Occupations in Labouring and Other Elemental Work, Forestry and Logging
7711	Rotary Well-Drilling and Related Occupations
7713	Other Rock and Soil Drilling Occupations
7715	Blasting Occupations
7717	Mining and Quarrying: Cutting, Handling and Loading Occupations
7718	Occupations in Labouring and Other Elemental Work, Mining and Quarrying Including Oil and Gas Fields
7719	Mining and Quarrying Including Oil and Gas Field Occupations, n.e.c.
8111	Crushing and Grinding Occupations, Mineral Ores
8113	Mixing, Separating, Filtering and Related Occupations, Mineral Ores
8115	Melting and Roasting Occupations, Mineral Ores
8116	Inspecting, Testing, Grading and Sampling Occupations, Mineral Ore Treating
8118	Occupations in Labouring and Other Elemental Work, Mineral Ore Treating
8119	Mineral Ore Treating Occupations, n.e.c.
8131	Metal Smelting, Converting and Refining Furnacemen
8133	Metal Heat-Treating Occupations
8135	Metal Rolling Occupations
8137	Moulding, Coremaking and Metal Casting Occupations
8141	Metal Extruding and Drawing Occupations
8143	Plating, Metal Spraying and Related Occupations
8146	Inspecting, Testing, Grading, and Sampling Occupations, Metal Processing
8148	Occupations in Labouring and Other Elemental Work, Metal Processing
8149	Metal Processing and Related Occupations, n.e.c.
8151	Furnacemen and Kilnmen: Clay, Glass and Stone
8153	Separating, Crushing, Grinding and Mixing Occupations: Clay, Glass and Stone
8155A	Forming Occupations, Clay
8155B	Forming Occupations, Glass
8155C	Forming Occupations, Stone
8156	Inspecting, Testing and Grading Occupations: Clay, Glass and Stone Processing and Forming
8158	Occupations in Labouring and Other Elemental Work: Clay, Glass and Stone Processing and Forming
8159	Clay, Glass and Stone Processing, Forming and Related Occupations, n.e.c.
8161	Mixing and Blending Occupations, Chemicals and Related Materials
8163	Filtering, Straining and Separating Occupations, Chemicals and Related Materials
8165	Distilling, Subliming and Carbonizing Occupations, Chemicals and Related Materials
8167	Roasting, Cooking and Drying Occupations, Chemicals and Related Materials

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

8171	Crushing and Grinding Occupations, Chemicals and Related Materials
8173	Coating and Calendering Occupations, Chemicals and Related Materials
8176	Inspecting, Testing and Sampling Occupations: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing
8178	Occupations in Labouring and Other Elemental Work: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing
8179	Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations, n.e.c.
8211	Flour and Grain Milling Occupations
8213	Baking, Confectionery Making and Related Occupations
8215	Slaughtering and Meat Cutting, Canning, Curing and Packing Occupations
8217	Fish Canning, Curing and Packing Occupations
8221	Fruit and Vegetable Canning, Preserving and Packing Occupations
8223	Milk Processing and Related Occupations
8225	Sugar Processing and Related Occupations
8226	Inspecting, Testing, Grading and Sampling Occupations: Food, Beverage and Related Processing
8227	Beverage Processing Occupations
8228	Occupations in Labouring and Other Elemental Work: Food, Beverage and Related Processing
8229	Food, Beverage and Related Processing Occupations, n.e.c.
8231	Sawmill Sawyers and Related Occupations
8233	Plywood Making and Related Occupations
8235	Wood Treating Occupations
8236	Inspecting, Testing and Grading Occupations: Wood Processing, Except Paper Pulp
8238	Occupations in Labouring and Other Elemental Work: Wood Processing, Except Paper Pulp
8239	Wood Processing Occupations, Except Paper Pulp, n.e.c.
8251	Cellulose Pulp Preparing Occupations
8253	Papermaking and Finishing Occupations
8256	Inspecting, Testing, Grading and Sampling Occupations, Pulp and Papermaking
8258	Occupations in Labouring and Other Elemental Work, Pulp and Papermaking
8259	Pulp and Papermaking and Related Occupations, n.e.c.
8261	Textile Fibre Preparing Occupations
8263	Textile Spinning and Twisting Occupations
8265	Textile Winding and Reeling Occupations
8267	Textile Weaving Occupations
8271	Knitting Occupations
8273	Textile Bleaching and Dyeing Occupations
8275	Textile Finishing and Calendering Occupations
8276	Inspecting, Testing, Grading and Sampling Occupations, Textile Processing
8278	Occupations in Labouring and Other Elemental Work, Textile Processing
8279	Textile Processing Occupations, n.e.c.
8293	Tobacco Processing Occupations
8295	Hide and Pelt Processing Occupations
8296	Inspecting, Testing, Grading and Sampling Occupations, Processing, n.e.c.

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

8298	Occupations in Labouring and Elemental Work, Other Processing
8299	Other Processing Occupations, n.e.c.
8311	Tool-and-Die Making Occupations
8313	Machinist and Machine-Tool Setting-Up Occupations
8315	Machine-Tool Operating Occupations
8316	Inspecting and Testing Occupations, Metal Machining
8319	Metal Machining Occupations, n.e.c.
8331	Forging Occupations
8333	Sheet-Metal Workers
8334	Metalworking-Machine Operators, n.e.c.
8335	Welding and Flame Cutting Occupations
8336	Inspecting and Testing Occupations, Metal Shaping and Forming, Except Machining
8337	Boilermakers, Platers and Structural-Metal Workers
8339	Metal Shaping and Forming Occupations, Except Machining, n.e.c.
8351	Wood Patternmaking Occupations
8353	Wood Sawing and Related Occupations, Except Sawmill
8355	Planing, Turning, Shaping and Related Wood Machining Occupations
8356	Inspecting Occupations, Wood Machining
8357	Wood Sanding Occupations
8359	Wood Machining Occupations, n.e.c.
8371	Cutting and Shaping Occupations: Clay, Glass, Stone and Related Materials
8373A	Abrading and Polishing Occupations: Stone, Cement, Abrasives and Clay
8373B	Abrading, Polishing and Coating Occupations: Optical Elements
8373C	Abrading and Polishing Occupations: Flat-Glass and Glassware
8376	Inspecting Occupations: Clay, Glass, Stone and Related Materials Machining
8379	Clay, Glass, Stone and Related Materials Machining Occupations, n.e.c.
8391	Engravers, Etchers and Related Occupations
8393	Filing, Grinding, Buffing, Cleaning and Polishing Occupations, n.e.c.
8395	Patternmakers and Mouldmakers, n.e.c.
8399	Other Machining and Related Occupations, n.e.c.
8511	Engine and Related Equipment Fabricating and Assembling Occupations, n.e.c.
8513	Motor Vehicle Fabricating and Assembling Occupations, n.e.c.
8515	Aircraft Fabricating and Assembling Occupations, n.e.c.
8523	Industrial, Farm, Construction and Other Mechanized Equipment and Machinery Fabricating and Assembling Occupations, n.e.c.
8525	Business and Commercial Machines Fabricating and Assembling Occupations, n.e.c.
8526	Inspecting and Testing Occupations, Fabricating and Assembling Metal Products, n.e.c.
8527	Precision Instruments and Related Equipment Fabricating and Assembling Occupations, n.e.c.
8529	Other Fabricating and Assembling Occupations, Metal Products, n.e.c.
8531	Electrical Equipment Fabricating and Assembling Occupations
8533	Electrical and Related Equipment Installing and Repairing Occupations, n.e.c.
8534	Electronic Equipment Fabricating and Assembling Occupations

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

8535	Electronic and Related Equipment Installing and Repairing Occupations, n.e.c.
8536	Inspecting and Testing Occupations: Fabricating, Assembling, Installing and Repairing Electrical, Electronic and Related Equipment
8537	Radio and Television Service Repairmen
8538	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling, Installing and Repairing Electrical, Electronic and Related Equipment
8539	Fabricating, Assembling, Installing and Repairing Occupations: Electrical, Electronic and Related Equipment, n.e.c.
8541	Cabinet and Wood Furniture Makers
8548	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Wood Products
8549	Fabricating, Assembling and Repairing Occupations: Wood Products, n.e.c.
8551	Patternmaking, Marking and Cutting Occupations: Textile, Fur and Leather Products
8553	Tailors and Dressmakers
8555	Furriers
8557	Milliners, Hat and Cap Makers
8561	Shoemaking and Repairing Occupations
8562	Upholsterers
8563	Sewing Machine Operators, Textile and Similar Materials
8566	Inspecting, Grading and Sampling Occupations: Fabricating, Assembling, and Repairing, Textile, Fur and Leather Products
8568	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Textile, Fur and Leather Products
8569	Fabricating, Assembling and Repairing Occupations: Textile, Fur and Leather Products, n.e.c.
8571	Bonding and Cementing Occupations, Rubber, Plastic and Related Products
8573	Moulding Occupations, Rubber, Plastic and Related Products
8575	Cutting and Finishing Occupations, Rubber, Plastic and Related Products
8576	Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products
8578	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products
8579	Fabricating, Assembling and Repairing Occupations, Rubber, Plastic and Related Products, n.e.c.
8581	Motor-Vehicle Mechanics and Repairmen
8582	Aircraft Mechanics and Repairmen
8583	Rail Transport Equipment Mechanics and Repairmen
8584	Industrial, Farm and Construction Machinery Mechanics and Repairmen
8585	Business and Commercial Machine Mechanics and Repairmen
8586	Inspecting and Testing Occupations, Equipment Repair, n.e.c.
8587	Watch and Clock Repairmen
8588	Precision-Instrument Mechanics and Repairmen
8589	Other Mechanics and Repairmen, n.e.c.
8591	Jewellery and Silverware Fabricating, Assembling and Repairing Occupations
8592A	Shipbuilding Occupations

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

8592B	Marine Craft Mechanics
8592C	Boatbuilding Occupations
8592D	Marine Craft Occupations, n.e.c.
8593	Paper Product Fabricating and Assembling Occupations
8595	Painting and Decorating Occupations, Except Construction
8596	Inspecting, Testing and Grading Occupations: Product Fabricating, Assembling and Repairing, n.e.c.
8598	Occupations in Labouring and Other Elemental Work: Product Fabricating, Assembling and Repairing, n.e.c.
8599A	Musical Instrument Fabricating, Assembling and Repairing Occupations, n.e.c.
8599B	Other Product Fabricating, Assembling and Repairing Occupations, n.e.c.
8711	Excavating, Grading and Related Occupations
8713	Paving, Surfacing and Related Occupations
8715	Railway Sectionmen and Trackmen
8718	Occupations in Labouring and Other Elemental Work: Excavating, Grading and Paving
8719	Excavating, Grading, Paving and Related Occupations, n.e.c.
8731	Electrical Power Linemen and Related Occupations
8733	Construction Electricians and Repairmen
8735	Wire Communications and Related Equipment Installing and Repairing Occupations
8736	Inspecting and Testing Occupations: Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing
8739	Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing Occupations, n.e.c.
8781	Carpenters and Related Occupations
8782	Brick and Stone Masons and Tile Setters
8783	Concrete Finishing and Related Occupations
8784	Plasterers and Related Occupations
8785	Painters, Paperhangers and Related Occupations
8786	Insulating Occupations, Construction
8787	Roofing, Waterproofing and Related Occupations
8791	Pipefitting, Plumbing and Related Occupations, n.e.c.
8793	Structural-Metal Erectors
8795	Glaziers
8796	Inspecting and Testing Occupations, Construction, Except Electrical
8798	Occupations in Labouring and Other Elemental Work, Other Construction Trades
8799A	Elevator Installers and Repairmen
8799B	Furnace Installers and Repairmen
8799C	Commercial and Industrial Air-Conditioning and Refrigeration Mechanics
8799D	Floor Surfacers
8799E	Other Construction Trades, n.e.c.
9111	Air Pilots, Navigators and Flight Engineers
9113	Air Transport Operating Support Occupations

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

9119	Air Transport Operating Occupations, n.e.c.
9131	Locomotive Engineers and Firemen
9133	Conductors and Brakemen, Railway
9135	Railway Transport Operating Support Occupations
9139	Railway Transport Operating Occupations, n.e.c.
9151	Deck Officers
9153	Engineering Officers, Ship
9155A	Ship's Carpenters
9155B	Deck Crew, Ship
9157	Engine and Boiler-Room Crew, Ship
9159	Water Transport Operating Occupations, n.e.c.
9171	Bus Drivers
9173	Taxi Drivers and Chauffeurs
9175	Truck Drivers
9179	Motor Transport Operating Occupations, n.e.c.
9191	Subway and Street Railway Operating Occupations
9193	Motormen and Dinkeymen, Except Railway Transport
9199	Other Transport and Related Equipment Operating Occupations, n.e.c.
9311	Hoisting Occupations, n.e.c.
9313	Longshoremen, Stevedores and Freight Handlers
9315	Material-Handling Equipment Operators, n.e.c.
9317	Packaging Occupations, n.e.c.
9318	Occupations in Labouring and Other Elemental Work, Material-Handling, n.e.c.
9319	Other Material-Handling and Related Occupations, n.e.c.
9511	Typesetting and Composing Occupations
9512	Printing Press Occupations
9513	Stereotyping and Electrotyping Occupations
9514	Printing-Engraving, Except Photoengraving Occupations
9515	Photoengraving and Related Occupations
9517	Bookbinding and Related Occupations
9518	Occupations in Labouring and Other Elemental Work, Printing and Related Activities
9519	Printing and Related Occupations, n.e.c.
9531	Power Station Operators
9533	Stationary Engine and Auxiliary Equipment Operating and Maintaining Occupations
9535	Water and Sanitation Utilities Equipment Operating Occupations
9537	Pumping and Pipeline Equipment Operating Occupations
9551	Radio and Television Broadcasting Equipment Operators
9553	Telegraph Operators
9555	Sound and Video Recording and Reproduction Equipment Operators
9557	Motion-Picture Projectionists
9559	Electronic and Related Communications Equipment Operating Occupations, n.e.c.

NUMERICAL LIST OF CHAPTER AND GROUP TITLES, VOLUME II

9591	Photographic Processing Occupations
9599	Miscellaneous Crafts and Equipment Operating Occupations, n.e.c.
990	Foremen Occupations
9916	Inspecting, Testing, Grading and Sampling Occupations, n.e.c.

ALPHABETIC INDEX OF CHAPTER AND GROUP TITLES

This index of chapter and group titles together with variations in their arrangement, according to key words in the title, has been prepared to assist the user to locate specific titles and their number. Titles in capital letters are actual chapters and groups while those in initial capitals are variations.

A

ABRADING AND POLISHING OCCUPATIONS:	
FLAT-GLASS AND GLASSWARE	8373C
ABRADING AND POLISHING OCCUPATIONS:	
STONE, CEMENT, ABRASIVES AND CLAY	8373A
ABRADING, POLISHING AND COATING	
OCCUPATIONS: OPTICAL ELEMENT	8373B
Abrasives, Stone, Cement and Clay Abrading and	
Polishing Occupations	8373A
Accommodation and Lodging Occupations, n.e.c.	6139
ACCOUNTANTS, AUDITORS AND OTHER	
FINANCIAL OFFICERS	1171
Accounting Clerks and Bookkeepers	4131
Account-Recording, Bookkeeping and Related	
Occupations, n.e.c.	4139
ACTORS	3335
Actuaries, Mathematicians and Statisticians	2181
ADJUSTERS, CLAIM	4192
Administrators and Managers, Other	113/114
Administrators and Officials Unique to Government,	
n.e.c.	1119
Administrators, Government	1113
ADVERTISING AND ILLUSTRATING ARTISTS ..	3314
ADVERTISING SALESMEN	5174
Agents and Salesmen, Insurance	5171
AGRICULTURISTS AND RELATED SCIENTISTS ..	2131
Air-Conditioning and Refrigeration Mechanics,	
Commercial and Industrial	8799C
AIRCRAFT FABRICATING AND ASSEMBLING	
OCCUPATIONS, N.E.C.	8515
AIRCRAFT MECHANICS AND REPAIRMEN	8582
AIR PILOTS, NAVIGATORS AND FLIGHT	
ENGINEERS	9111
AIR TRANSPORT OPERATING OCCUPATIONS,	
N.E.C.	9119
AIR TRANSPORT OPERATING SUPPORT	
OCCUPATIONS	9113
Analysts Methods and Organization	1173
Animal Breeders, Domestic	711B
ANIMAL CARE OCCUPATIONS, N.E.C.	7199A
Animal-Husbandry and Horticultural Occupations,	
Other Farming, n.e.c.	7199
Announcers, Radio and Television	3337
Anthropologists, Sociologists and Related Social	
Scientists	2313
APPAREL AND FURNISHINGS SERVICE	
OCCUPATIONS, N.E.C.	6169
ARCHITECTS	2141
ARCHITECTURAL AND ENGINEERING	
TECHNOLOGISTS AND TECHNICIANS	2165
Archival Sciences, Library and Museum, n.e.c.	2359
Archival Sciences, Library and Museum, Supervisors ..	2350
Archival Sciences, Library and Museum Technicians	2353
Archivists and Librarians	2351
Artists, Advertising and Illustrating	3314
Assembling and Fabricating Metal Products, Inspecting	
and Testing Occupations, n.e.c.	8526
Assembling and Fabricating Occupations, Aircraft,	
n.e.c.	8515
Assembling and Fabricating Occupations, Business and	
Commercial Machines, n.e.c.	8525
Assembling and Fabricating Occupations, Electrical	
Equipment	8531
Assembling and Fabricating Occupations, Electronic	
Equipment	8534
Assembling and Fabricating Occupations, Engine and	
Related Equipment, n.e.c.	8511
Assembling and Fabricating Occupations, Industrial,	
Farm, Construction and Other Mechanized	
Equipment and Machinery, n.e.c.	8523
Assembling and Fabricating Occupations, Motor	
Vehicle, n.e.c.	8513
Assembling and Fabricating, Paper Product	
Occupations	8593
Assembling and Fabricating Precision Instruments and	
Related Equipment Occupations, n.e.c.	8527
Assembling, Fabricating and Repairing Occupations,	
Jewellery and Silverware	8591
Assembling, Fabricating and Repairing Occupations,	
Musical Instruments, n.e.c.	8599A
Assembling, Fabricating and Repairing Occupations,	
Other Product, n.e.c.	8599B
Assembling, Fabricating and Repairing Occupations,	
Rubber, Plastic and Related Products, n.e.c.	8579
Assembling, Fabricating and Repairing Occupations,	
Textile, Fur and Leather Products, n.e.c.	8569
Assembling, Fabricating and Repairing, Rubber,	
Plastic and Related Products, Inspecting, Testing,	
Grading and Sampling Occupations	8576
Assembling, Fabricating and Repairing, Rubber,	
Plastic and Related Products, Occupations in	
Labouring and Other Elemental Work	8578
Assembling, Fabricating and Repairing, Textile, Fur	
and Leather Products, Inspecting, Grading and	
Sampling Occupations	8566
Assembling, Fabricating and Repairing, Textile, Fur	
and Leather Products, Occupations in Labouring and	
Other Elemental Work	8568
Assembling, Fabricating, Installing and Repairing	
Electrical, Electronic and Related Equipment,	
Inspecting and Testing Occupations	8536
Assembling, Fabricating, Installing and Repairing	
Electrical, Electronic and Related Equipment:	
Occupations in Labouring and Other Elemental	
Work	8538
Assistants and Technicians, Dental Hygienists	3157
Assistants, Nursing	3134

Assistants, Social-Services	2333B
ATHLETES	3713
Attendants, Service Station	5145
ATTENDANTS, SPORT AND RECREATION	3715
Audiovisual and Performing Arts, Occupations, n.e.c. ..	3339
Audiovisual and Performing Arts, Producers and Directors	3330
Auditors, Accountants and Other Financial Officers	1171
Auxiliary Equipment and Stationary Engine Operating and Maintaining Occupations	9533

B

BABYSITTERS	6147
Baggage and Sleeping-Car Porters, and Bellmen	6135
BAKING, CONFECTIONERY MAKING AND RELATED OCCUPATIONS	8213
Bank, Insurance and Other Finance Clerks	4135
BARBERS, HAIRDRESSERS AND RELATED OCCUPATIONS	6143
BARTENDERS	6123
Bellmen, Sleeping-Car and Baggage Porters	6135
Beverage and Food Preparation and Related Service Occupations, n.e.c.	6129
Beverage and Food Waiters, Hostesses and Stewards ..	6125
Beverage, Food and Related Processing Occupations in Labouring, and Other Elemental Work	8228
Beverage, Food and Related Processing: Inspecting, Testing, Grading and Sampling Occupations	8226
Beverage, Food and Related Processing Occupations, n.e.c.	8229
BEVERAGE PROCESSING OCCUPATIONS	8227
BIOLOGISTS AND RELATED SCIENTISTS	2133
BLASTING OCCUPATIONS	7715
Bleaching and Dyeing Occupations, Textile	8273
Blending and Mixing Occupations, Chemicals and Related Materials	8161
BOATBUILDING OCCUPATIONS	8592C
BOILERMAKERS, PLATERS AND STRUCTURAL METAL WORKERS	8337
Boiler-Room and Engine Crew, Ship	9157
BONDING AND CEMENTING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS	8571
BOOKBINDING AND RELATED OCCUPATIONS	9517
BOOKKEEPING AND ACCOUNTING CLERKS ...	4131
BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS, N.E.C.	4139
Brakemen and Conductors, Railway	9133
BREEDERS, SMALL DOMESTIC ANIMALS	711B
BRICK AND STONE MASONS AND TILE SETTERS	8782
Broadcasting Equipment Operators, Radio and Television	9551
Buffing, Filing, Grinding, Cleaning and Polishing Occupations, n.e.c.	8393
BUS DRIVERS	9171
BUSINESS AND COMMERCIAL MACHINE MECHANICS AND REPAIRMEN	8585
BUSINESS AND COMMERCIAL MACHINES	

FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.	8525
BUSINESS SERVICES SALESMEN	5177
Buyers and Purchasing Officers, Except Wholesale and Retail Trade	1175
BUYERS, WHOLESALE AND RETAIL TRADE	5191

C

CABINET AND WOOD FURNITURE MAKERS	8541
Calendering and Coating Occupations, Chemicals and Related Materials	8173
Calendering and Finishing Occupations, Textile	8275
Cameramen and Photographers	3315A
Cameramen and Photographers, Other	3315B
Canning, Slaughtering and Meat Cutting, Curing and Packing Occupations	8215
Cap and Hat Makers, Milliners	8557
CAPTAINS AND OTHER OFFICERS, FISHING VESSELS	7311
Carbonizing, Distilling and Carbonizing Occupations, Chemicals and Related Materials	8165
CARPENTERS AND RELATED OCCUPATIONS ..	8781
Carpenters, Ships	9155A
Cashiers and Tellers	4133
CELLULOSE PULP PREPARING OCCUPATIONS ..	8251
Cementing and Bonding Occupations, Rubber, Plastic and Related Products	8571
Cement, Stone, Abrasives and Clay Abrading and Polishing Occupations	8373A
CHAMBERMAIDS AND HOUSEMEN	6133
Charworkers, Janitors and Cleaners	6191
Chauffeurs and Taxi Drivers	9173
CHEFS AND COOKS	6121
Chemicals and Related Materials, Coating and Calendering Occupations	8173
Chemicals and Related Materials, Crushing and Grinding Occupations	8171
Chemicals and Related Materials, Distilling, Subliming and Carbonizing Occupations	8165
Chemicals and Related Materials, Filtering, Straining and Separating Occupations	8163
Chemicals and Related Materials, Mixing and Blending Occupations	8161
Chemicals and Related Materials, Roasting, Cooking and Drying Occupations	8167
Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing, Inspecting, Testing and Sampling Occupations	8176
Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations in Labouring and Other Elemental Work	8178
Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations, n.e.c.	8179
CHEMISTS	2111
Chiropractors and Osteopaths	3117
CHOIRMASTERS AND SINGERS	3332B
CHOREOGRAPHERS AND DANCERS	3333
Clay Forming Occupations	8155A
Claim Adjusters	4192
Clay, Glass and Stone Furnacemen and Kilnmen	8151

Clay, Glass and Stone Processing and Forming: Inspecting, Testing and Grading Occupations	8156
Clay, Glass and Stone Processing and Forming Occupations in Labouring and Other Elemental Work	8158
CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS, N.E.C.	8159
Clay, Glass and Stone Separating, Crushing, Grinding and Mixing Occupations	8153
Clay, Glass, Stone and Related Materials, Cutting and Shaping Occupations	8371
Clay, Glass, Stone and Related Materials Machining, Inspecting Occupations	8376
CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING OCCUPATIONS, N.E.C.	8379
Clay, Stone, Cement and Abrasives Abrading and Polishing Occupations	8373A
Cleaners, Janitors and Charworkers	6191
Cleaning, Filing, Grinding, Buffing and Polishing Occupations, n.e.c.	8393
Clerical and Related Occupations, n.e.c.	4199
CLERICAL SUPERVISORS (includes 4110, 4130, 4140, 4150, 4160, 4170, 4190)	410
Clerks, Bookkeeping and Accounting	4131
Clerks, General Office	4197
Clerks, Hotel	4194
Clerks, Insurance, Bank and Other Finance	4135
Clerks, Library and File	4161B
Clerks, Library, File, Correspondence and Related Occupations, n.e.c.	4169
Clerks, Mail and Postal	4173
Clerks, Personnel	4195
Clerks, Production	4151
Clerks, Receptionists and Information	4171
Clerks, Shipping and Receiving	4153
Clerks, Statistical	4137
Clerks, Stock and Related Occupations	4155
Clerk-Typists and Typists	4113
Clock and Watch Repairmen	8587
COACHES, TRAINERS, INSTRUCTORS AND MANAGERS, SPORT AND RECREATION	3710
Coating, Abrading and Polishing Occupations: Optical Elements	8373B
COATING AND CALENDERING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS	8173
COLLECTORS	4191
Commercial and Business Machine Mechanics and Repairmen	8585
Commercial and Business Machines Fabricating and Assembling Occupations, n.e.c.	8525
Commercial and Fine Art, Photography and Related Occupations, n.e.c.	3319
COMMERCIAL AND INDUSTRIAL AIR- CONDITIONING AND REFRIGERATION MECHANICS	8799C
COMMERCIAL TRAVELLERS	5133
COMMUNITY COLLEGE AND VOCATIONAL SCHOOL TEACHERS	2791
Community Recreational Services	2333A

COMPOSERS, ARRANGERS AND RELATED OCCUPATIONS	3332C
Composing and Typesetting Occupations	9511
Computer Programmers, Systems Analysts and Related Occupations	2183
CONCRETE FINISHING AND RELATED OCCUPATIONS	8783
CONDUCTORS AND BRAKEMEN, RAILWAY	9133
CONDUCTORS AND INSTRUMENTALISTS	3332A
Confectionery Making, Baking and Related Occupations	8213
Conservation Occupations, Forestry	7511
CONSTRUCTION ELECTRICIANS AND REPAIRMEN	8733
Construction, Industrial and Farm Machinery Mechanics and Repairmen	8584
Construction, Industrial, Farm and Other Mechanized Equipment and Machinery Fabricating and Assembling Occupations, n.e.c.	8523
Construction, Inspecting and Testing Occupations, Except Electrical	8796
Construction Insulating Occupations	8786
Construction, Production, Installation, Operation and Maintenance Engineers	214/215B
Converting and Refining Furnacemen, Metal Smelting Cooking, Roasting and Drying Occupations, Chemicals and Related Materials	8167
Cooks and Chefs	6121
Coremaking, Moulding and Metal Casting Occupations	8137
CORRECTIONAL OFFICERS AND MATRONS	6115A
Correspondence, Library and File Clerks and Related Occupations, n.e.c.	4169
Counsellors, Educational and Vocational	2391
Crafts and Equipment Operating Occupations, Miscellaneous, n.e.c.	9599
Creative Musical Work	3332C
CRUSHING AND GRINDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS	8171
CRUSHING AND GRINDING OCCUPATIONS, MINERAL ORES	8111
Crushing, Separating, Grinding and Mixing Occupations: Clay, Glass and Stone	8153
Curing, Fish Canning and Packing Occupations	8217
Curing, Slaughtering and Meat Cutting, Canning and Packing Occupations	8215
Custom Operators and Farm-Machinery Operators	7197
CUTTING AND FINISHING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS	8575
CUTTING AND SHAPING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS	8371
Cutting, Patternmaking and Marking Occupations: Textile, Fur and Leather Products	8551

D

DAIRY WORKERS, FARM	7191
Dancers and Choreographers	3333
Data-Processing Equipment Operators, Electronic	4143

DECK CREW, SHIP	9155B
DECK OFFICERS	9151
Decorating and Painting Occupations, Except Construction	8595
DENTAL HYGIENISTS, ASSISTANTS AND TECHNICIANS	3157
DENTISTS	3113
Designers; Product and Interior	3313
Design, Research and Development Engineers	214/215A
Detectives and Policemen, Government	6112
Development, Research and Design Engineers	214/215A
Die and Tool-Making Occupations	8311
DIETITIANS AND NUTRITIONISTS	3152
Dinkeymen and Motormen, Except Railway Transport	9193
Directors and Producers, Performing and Audiovisual Arts	3330
DISPENSING OPTICIANS	3154
DISTILLING, SUBLIMING AND CARBONIZING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS	8165
Distributing, Material Recording and Scheduling Occupations, n.e.c.	4159
Domestic Animal Breeders	711B
Door-to-Door Salesmen and Street Vendors	5141
DRAUGHTSMEN	2163
Drawing and Metal Extruding Occupations	8141
Dressmakers and Tailors	8553
DRIVER-SALESMEN	5193
Drivers, Bus	9171
Drivers, Taxi and Chauffeurs	9173
Drivers, Truck	9175
DRY-CLEANING OCCUPATIONS	6163
Drying, Roasting and Cooking Occupations, Chemicals and Related Materials	8167
Dyeing and Bleaching Occupations, Textile	8273

E

ECONOMISTS	2311
Editors and Writers, Publication	3351
Editors and Writers: Radio, Television, Theatre and Motion Pictures	3353
EDUCATIONAL AND VOCATIONAL COUNSELLORS	2391
ELECTRICAL AND RELATED EQUIPMENT INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.	8533
Electrical, Electronic and Related Equipment Fabricating, Assembling, Installing and Repairing Occupations in Labouring and Other Elemental Work	8538
Electrical, Electronic and Related Equipment Fabricating, Assembling, Installing and Repairing Occupations, n.e.c.	8539
Electrical, Electronic and Related Equipment, Inspecting, Testing, Fabricating, Assembling, Installing and Repairing Occupations	8536
ELECTRICAL EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS	8531
Electrical Power, Lighting and Wire Communications	

Equipment Erecting, Installing and Repairing: Inspecting and Testing Occupations	8736
ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.	8739
ELECTRICAL POWER LINEMEN AND RELATED OCCUPATIONS	8731
Electricians and Repairmen, Construction	8733
ELECTRONIC AND RELATED COMMUNICATIONS EQUIPMENT OPERATING OCCUPATIONS, N.E.C.	9559
ELECTRONIC AND RELATED EQUIPMENT INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.	8535
ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS	4143
Electronic, Electrical and Related Equipment Fabricating, Assembling, Installing and Repairing Occupations in Labouring and Other Elemental Work	8538
Electronic, Electrical and Related Equipment Fabricating, Assembling, Installing and Repairing Occupations, n.e.c.	8539
Electronic, Electrical and Related Equipment, Inspecting, Testing Fabricating, Assembling, Installing and Repairing Occupations	8536
ELECTRONIC EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS	8534
Electrotyping and Stereotyping Occupations	9513
ELEMENTARY AND KINDERGARTEN TEACHERS	2731
ELEVATOR-OPERATING OCCUPATIONS	6193
ELEVATORS INSTALLERS AND REPAIRMEN ...	8799A
Embalmers, Funeral Directors and Related Occupations	6141
ENGINE AND BOILER-ROOM CREW, SHIP	9157
ENGINE AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.	8511
Engineering and Architectural Technologists and Technicians	2165
ENGINEER OFFICERS, SHIP	9153
Engineers and Firemen, Locomotive	9131
Engineers: Industrial and Environmental	214/215C
Engineers: Production, Construction, Installation, Operation and Maintenance	214/215B
Engineers: Research, Design and Development	214/215A
ENGRAVERS, ETCHERS AND RELATED OCCUPATIONS	8391
Environmental and Industrial Engineers	214/215C
Equipment Repair, Inspecting and Testing Occupations, n.e.c.	8586
Erectors, Structural-Metal	8793
Etchers, Engravers and Related Occupations	8391
Excavating, Grading and Paving Occupations in Labouring and Other Elemental Work	8718
EXCAVATING, GRADING AND RELATED OCCUPATIONS	8711
EXCAVATING, GRADING, PAVING AND RELATED OCCUPATIONS, N.E.C.	8719
Exceptional Students Teachers, n.e.c.	2795

F

Fabricating and Assembling Metal Products, Inspecting and Testing Occupations, n.e.c.	8526
Fabricating and Assembling Occupations, Aircraft, n.e.c.	8515
Fabricating and Assembling Occupations, Business and Commercial Machines, n.e.c.	8525
Fabricating and Assembling Occupations, Electrical Equipment	8531
Fabricating and Assembling Occupations, Electronic Equipment	8534
Fabricating and Assembling Occupations, Engine and Related Equipment, n.e.c.	8511
Fabricating and Assembling Occupations, Industrial, Farm, Construction and Other Mechanized Equipment and Machinery, n.e.c.	8523
Fabricating and Assembling Occupations, Motor Vehicle, n.e.c.	8513
Fabricating and Assembling Occupations, Paper Product	8593
Fabricating and Assembling Occupations, Precision Instruments and Related Equipment, n.e.c.	8527
Fabricating, Assembling and Repairing Occupations, Jewellery and Silverware	8591
Fabricating, Assembling and Repairing Occupations, Musical Instruments, n.e.c.	8599A
Fabricating, Assembling and Repairing Occupations, Other Product, n.e.c.	8599B
FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS, N.E.C.	8549
Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products, Inspecting, Testing, Grading and Sampling Occupations	8576
Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products: Occupations in Labouring and Other Elemental Work	8578
Fabricating, Assembling and Repairing, Textile, Fur and Leather Products, Inspecting, Grading and Sampling Occupations	8566
Fabricating, Assembling and Repairing, Textile, Fur and Leather Products, Occupations in Labouring and Other Elemental Work	8568
Fabricating, Assembling, Installing and Repairing Electrical, Electronic and Related Equipment; Inspecting and Testing Occupations	8536
Fabricating, Assembling, Installing and Repairing Electrical, Electronic and Related Equipment: Occupations in Labouring and Other Elemental Work	8538
FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS: ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT, N.E.C.	8539
FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS, N.E.C.	8579
FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS, N.E.C.	8569
FARMERS	711A

Farm, Industrial and Construction Machinery Mechanics and Repairmen	8584
Farm, Industrial, Construction and Other Mechanized Equipment and Machinery Fabricating and Assembling Occupations, n.e.c.	8523
Farming, Horticultural and Animal-Husbandry Occupations, n.e.c.	7199
FARM-MACHINERY OPERATORS AND CUSTOM OPERATORS	7197
FARM MANAGEMENT OCCUPATIONS	7131
Farm Workers, Dairy	7191
Farm Workers, General	7181
Farm Workers, Poultry	7193
Fibre Preparing Occupations, Textile	8261
FIELD CROP AND VEGETABLE-GROWING WORKERS	7183
File and Library Clerks	4161B
File, Library and Correspondence Clerks and Related Occupations, n.e.c.	4169
FILING, GRINDING, BUFFING, CLEANING AND POLISHING OCCUPATIONS, N.E.C.	8393
Filtering, Mixing, Separating and Related Occupations, Mineral Ores	8113
FILTERING, STRAINING AND SEPARATING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS	8163
Finance, Insurance and Bank Clerks	4135
Financial Officers, Accountants and Auditors	1171
Fine and Commercial Art, Photography and Related Fields, n.e.c.	3319
FINE ARTS TEACHERS	2792
Finishing and Calendering Occupations, Textile	8275
Finishing and Cutting Occupations, Rubber, Plastic and Related Products	8575
Finishing and Papermaking Occupations	8253
FIRE-FIGHTING OCCUPATIONS	6111
Firemen and Engineers, Locomotive	9131
FISH CANNING, CURING AND PACKING OCCUPATIONS	8217
FISHERMEN: NET, TRAP AND LINE	7313
FISHING, HUNTING, TRAPPING AND RELATED OCCUPATIONS, N.E.C.	7319
Flame Cutting and Welding Occupations	8335
Flat-Glass and Glassware Abrading and Polishing Occupations	8373C
Flight Engineers, Air Pilots and Navigators	9111
FLOOR SURFACERS	8799D
FLOUR AND GRAIN MILLING OCCUPATIONS	8211
FLYING INSTRUCTORS	2797A
FOOD AND BEVERAGE PREPARATION AND RELATED SERVICE OCCUPATIONS, N.E.C.	6129
Food and Beverage Waiters, Hostesses and Stewards	6125
Food, Beverage and Related Processing Occupations in Labouring and Other Elemental Work	8228
Food, Beverage and Related Processing: Inspecting, Testing, Grading and Sampling Occupations	8226
FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS, N.E.C.	8229
FOREMEN OCCUPATIONS	990
Forestry and Logging Occupations in Labouring and Other Elemental Work	7518
FORESTRY CONSERVATION OCCUPATIONS	7511

FORGING OCCUPATIONS	8331
Forming and Metal Shaping, Inspecting and Testing Occupations, Except Machining	8336
FORMING OCCUPATIONS, CLAY	8155A
FORMING OCCUPATIONS, GLASS	8155B
FORMING OCCUPATIONS, STONE	8155C
Freight Handlers, Longshoremen and Stevedores	9313
Freight, Travel Clerks, Ticket and Station Agents	4193
FRUIT AND VEGETABLE CANNING, PRESERVING AND PACKING OCCUPATIONS	8221
FUNERAL DIRECTORS, EMBALMERS AND RELATED OCCUPATIONS	6141
FURNACE INSTALLERS AND REPAIRMEN	8799B
FURNACEMEN AND KILNMEN: CLAY, GLASS AND STONE	8151
Furnishings and Apparel Service Occupations, n.e.c.	6169
FURRIERS	8555
Fur, Textile and Leather Products, Fabricating, Assembling and Repairing Occupations in Labouring and Other Elemental Work	8568
Fur, Textile and Leather Products, Fabricating, Assembling and Repairing Occupations, n.e.c.	8569
Fur, Textile and Leather Products: Fabricating, Assembling, Repairing, Inspecting, Grading and Sampling Occupations	8566
Fur, Textile and Leather Products, Patternmaking, Marking and Cutting Occupations	8551

G

Gas and Oil Field Occupations Including Mining and Quarrying, n.e.c.	7719
Gas and Oil Field Occupations in Labouring Including Mining and Quarrying and Other Elemental Work ..	7718
GENERAL MANAGERS AND OTHER SENIOR OFFICIALS	1130
GENERAL OFFICE CLERKS	4197
GENERAL WORKERS, FARM	7181
GEOLOGISTS AND RELATED OCCUPATIONS	2112
Glass, Clay and Stone Furnacemen and Kilnmen	8151
Glass, Clay and Stone Processing and Forming: Inspecting, Testing and Grading Occupations	8156
Glass, Clay and Stone Processing and Forming Occupations in Labouring and Other Elemental Work	8158
Glass, Clay and Stone Processing, Forming and Related Occupations, n.e.c.	8159
Glass, Clay and Stone Separating, Crushing, Grinding and Mixing Occupations	8153
Glass, Clay, Stone and Related Materials, Cutting and Shaping Occupations	8371
Glass, Clay, Stone and Related Materials Machining: Inspecting Occupations	8376
Glass, Clay, Stone and Related Materials Machining Occupations, n.e.c.	8379
Glass, Forming Occupations	8155B
Glassware and Flat-Glass Abrading and Polishing Occupations	8373C
GLAZIERS	8795
GOVERNMENT ADMINISTRATORS	1113

Government, Inspectors and Regulatory Officers	1116
Grading, Excavating and Paving Occupations in Labouring and Other Elemental Work	8718
Grading, Excavating and Related Occupations	8711
Grading, Excavating, Paving and Related Occupations, n.e.c.	8719
Grading, Inspecting and Sampling Occupations: Fabricating, Assembling and Repairing, Textile, Fur and	8566
Leather Products	8566
Grading, Inspecting and Testing Occupations: Clay, Glass and Stone Processing and Forming	8156
Grading, Inspecting and Testing Occupations: Product Fabricating, Assembling and Repairing, n.e.c.	8596
Grading, Inspecting and Testing Occupations: Wood Processing, Except Paper Pulp	8236
Grading, Inspecting, Testing and Sampling Occupations: Fabricating, Assembling and Repairing, Rubber Plastic and Related Products	8576
Grading, Inspecting, Testing and Sampling Occupations: Food, Beverage and Related Processing	8226
Grading, Inspecting, Testing and Sampling Occupations, Metal Processing	8146
Grading, Inspecting, Testing and Sampling Occupations, Mineral Ore Treating	8116
Grading, Inspecting, Testing and Sampling Occupations, n.e.c.	9916
Grading, Inspecting, Testing and Sampling Occupations, Processing, n.e.c.	8296
Grading, Inspecting, Testing and Sampling Occupations, Pulp and Papermaking	8256
Grading, Inspecting, Testing and Sampling Occupations, Textile Processing	8276
Graduate Nurses, Except Supervisors	3131
Grain and Flour Milling Occupations	8211
Grinding and Crushing Occupations, Chemicals and Related Materials	8171
Grinding and Crushing Occupations, Mineral Ores	8111
Grinding, Filing, Buffing, Cleaning and Polishing Occupations, n.e.c.	8393
Grinding, Separating, Crushing and Mixing Occupations: Clay, Glass and Stone	8153
GUARDS AND WATCHMEN	6115B
GUIDES	6144

H

Hairdressers, Barbers and Related Occupations	6143
Hat and Cap Makers, Milliners	8557
Health and Medicine Occupations, n.e.c.	3159
HEALTH DIAGNOSING AND TREATING OCCUPATIONS, N.E.C	3119
Heat-Treating Occupations, Metal	8133
HIDE AND PELT PROCESSING OCCUPATIONS	8295
HOISTING OCCUPATIONS, N.E.C	9311
HORSEMEN	7187A
Horticultural and Animal-Husbandry Occupations, Other Farming, n.e.c.	7199
HOSTESSES AND STEWARDS, EXCEPT FOOD AND BEVERAGE	6145

Hostesses, Waiters and Stewards, Food and Beverage	6125
HOTEL CLERKS	4194
Housemen and Chambermaids	6133
Hunting, Fishing, Trapping and Related Occupations, n.e.c.	7319
Hunting, Trapping and Related Occupations	7315

I

Illustrating and Advertising Artists	3314
Industrial and Commercial Air-Conditioning and Refrigeration Mechanics	8799C
INDUSTRIAL AND ENVIRONMENTAL ENGINEERS (except chapter 2141)	214/215C
INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY MECHANICS AND REPAIRMEN	8584
INDUSTRIAL, FARM AND CONSTRUCTION AND OTHER MECHANIZED EQUIPMENT AND MACHINERY FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.	8523
Information and Receptionists Clerks	4171
Information, Reception, Mail and Message Distribution Occupations, n.e.c.	4179
INSPECTING AND TESTING OCCUPATIONS, CONSTRUCTION, EXCEPT ELECTRICAL	8796
INSPECTING AND TESTING OCCUPATIONS: ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING	8736
INSPECTING AND TESTING OCCUPATIONS, EQUIPMENT REPAIR, N.E.C.	8586
INSPECTING AND TESTING OCCUPATIONS, FABRICATING AND ASSEMBLING METAL PRODUCTS, N.E.C.	8526
INSPECTING AND TESTING OCCUPATIONS: FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT	8536
INSPECTING AND TESTING OCCUPATIONS, METAL MACHINING	8316
INSPECTING AND TESTING OCCUPATIONS, METAL SHAPING AND FORMING, EXCEPT MACHINING	8336
INSPECTING, GRADING AND SAMPLING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, TEXTILE, FUR AND LEATHER PRODUCTS	8566
INSPECTING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING	8376
INSPECTING OCCUPATIONS, WOOD MACHINING	8356
INSPECTING, TESTING AND GRADING OCCUPATIONS: CLAY, GLASS AND STONE PROCESSING AND FORMING	8156
INSPECTING, TESTING AND GRADING OCCUPATIONS: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C.	8596
INSPECTING, TESTING AND GRADING	

OCCUPATIONS: WOOD PROCESSING, EXCEPT PAPER PULP	8236
INSPECTING, TESTING AND SAMPLING OCCUPATIONS: CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING	8176
INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, RUBBER, PLASTIC AND RELATED PRODUCTS	8576
INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: FOOD, BEVERAGE AND RELATED PROCESSING	8226
INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, METAL PROCESSING	8146
INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, MINERAL ORE TREATING	8116
INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, N.E.C.	9916
INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PROCESSING, N.E.C.	8296
INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PULP AND PAPERMAKING	8256
INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, TEXTILE PROCESSING	8276
INSPECTORS AND REGULATORY OFFICERS, GOVERNMENT	1116
INSPECTORS AND REGULATORY OFFICERS, NON-GOVERNMENT	1176
Installation, Production, Construction, Operation and Maintenance Engineers	214/215B
Installers and Repairmen, Elevator	8799A
Installers and Repairmen, Furnace	8799B
Installing and Repairing Occupations, Electrical and Related Equipment, n.e.c.	8533
Installing and Repairing Occupations, Electronic and Related Equipment, n.e.c.	8535
Installing and Repairing Occupations, Wire Communications and Related Equipment	8735
Installing, and Fabricating, Assembling and Repairing Electrical, Electronic and Related Equipment, Inspecting and Testing Occupations	8536
Installing, Fabricating, Assembling and Repairing Electrical, Electronic and Related Equipment: Occupations in Labouring and Other Elemental Work	8538
INSTRUCTORS AND TRAINING OFFICERS, N.E.C.	2797B
Instructors, Coaches, Trainers and Managers, Sport and Recreation	3710
INSTRUCTORS, FLYING	2797A
Instrumental, Musical Work	3332A
INSULATING OCCUPATIONS, CONSTRUCTION	8786
INSURANCE, BANK AND OTHER FINANCE CLERKS	4135
INSURANCE SALESMEN AND AGENTS	5171

Interior and Product Designers	3313
Interpreters and Translators	3355
Investigators and Policemen, Private	6113

J

JANITORS, CHARWORKERS AND CLEANERS	6191
JEWELLERY AND SILVERWARE FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS	8591
JUDGES AND MAGISTRATES	2341
Jurisprudence and Law, n.e.c.	2349

K

Kilnmen and Furnacemen: Clay, Glass and Stone	8151
Kindergarten and Elementary Teachers	2731
KNITTING OCCUPATIONS	8271

L

LAUNDERING OCCUPATIONS	6161
Law and Jurisprudence, n.e.c.	2349
LAWYERS AND NOTARIES	2343
Leather, Textile and Fur Products, Assembling, Fabricating, Repairing, Inspecting, Grading and Sampling Occupations	8566
Leather, Textile and Fur Products, Fabricating, Assembling and Repairing Occupations in Labouring and Other Elemental Work	8568
Leather, Textile and Fur Products, Fabricating, Assembling and Repairing Occupations, n.e.c.	8569
Leather, Textile and Fur Products, Patternmaking, Marking and Cutting Occupations	8551
LIBRARIANS AND ARCHIVISTS	2351
Librarians, Medical-Record	4161A
LIBRARY AND FILE CLERKS	4161B
LIBRARY, FILE AND CORRESPONDENCE CLERKS AND RELATED OCCUPATIONS, N.E.C.	4169
Library, Museum and Archival Sciences, n.e.c.	2359
Library, Museum and Archival Sciences: Supervisors	2350
Library, Museum and Archival Sciences Technicians	2353
Life Sciences Occupations, n.e.c.	2139
LIFE SCIENCES TECHNOLOGISTS AND TECHNICIANS	2135
Lighting, Electrical Power and Wire Communications Equipment, Erecting, Installing and Repairing: Inspecting and Testing Occupations	8736
Lighting, Electrical Power and Wire Communications Equipment Erecting, Installing and Repairing Occupations, n.e.c.	8739
Linemen, Electrical Power and Related Occupations	8731
Line, Net and Trap Fishermen	7313
LIVESTOCK WORKERS	7187B
LOCOMOTIVE ENGINEERS AND FIREMEN	9131
Lodging and Other Accommodation Occupations, n.e.c.	6139

Logging and Forestry Occupations in Labouring and Other Elemental Work	7518
LOG HOISTING, SORTING, MOVING AND RELATED OCCUPATIONS	7517
LOG INSPECTING, GRADING, SCALING AND RELATED OCCUPATIONS	7516
LONGSHOREMEN, STEVEDORES AND FREIGHT HANDLERS	9313

M

Machinery Fabricating and Assembling Occupations, Industrial, Farm, Construction and Other Mechanized Equipment, n.e.c.	8523
Machine Operators, Office	4141
Machine-Tool and Machinist Setting-Up Occupations ..	8313
MACHINE-TOOL OPERATING OCCUPATIONS ..	8315
Machining Occupations, Metal, n.e.c.	8319
Machining Occupations, Wood, n.e.c.	8359
MACHINIST AND MACHINE-TOOL SETTING-UP OCCUPATIONS	8313
Magistrates and Judges	2341
MAIL AND POSTAL CLERKS	4173
MAIL CARRIERS	4172
Mail, Reception, Information and Message Distribution Occupations, n.e.c.	4179
Managers and Administrators, Other	113/114
Managers, Coaches, Trainers and Instructors, Sport and Recreation	3710
MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS (includes 5130, 5170, 5190)	510
MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS (includes 6120, 6130, 6160, 6190)	610
MARINE CRAFT MECHANICS	8592B
MARINE CRAFT OCCUPATIONS, N.E.C.	8592D
Marking, Patternmaking and Cutting Occupations: Textile, Fur and Leather Products	8551
MATERIAL-HANDLING EQUIPMENT OPERATORS, N.E.C.	9315
Material-Handling Occupations in Labouring and Other Elemental Work, n.e.c.	9318
MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS, N.E.C.	4159
MATHEMATICIANS, STATISTICIANS AND ACTUARIES	2181
Mathematics, Statistics, System Analysis and Related Fields, n.e.c.	2189
Matrons and Correctional Officers	6115A
Meat Cutting and Slaughtering, Canning, Curing and Packing Occupations	8215
Mechanics and Repairmen, Aircraft	8582
Mechanics and Repairmen, Business and Commercial Machines	8585
Mechanics and Repairmen, Industrial, Farm and Construction Machinery	8584
Mechanics and Repairmen, Motor-Vehicle	8581
Mechanics and Repairmen, Other, n.e.c.	8589
Mechanics and Repairmen, Precision-Instrument	8588
Mechanics and Repairmen, Rail Transport Equipment ..	8583

Mechanics, Marine Craft	8592B
MEDICAL LABORATORY TECHNOLOGISTS AND TECHNICIANS	3156
MEDICAL RECORD LIBRARIANS	4161A
Medicine and Health Occupations, n.e.c.	3159
MELTING AND ROASTING OCCUPATIONS, MINERAL ORES	8115
Message, Reception, Information and Mail Distribution Occupations, n.e.c.	4179
MESSENGERS	4177
Metal Casting, Moulding and Coremaking Occupations	8137
METAL EXTRUDING AND DRAWING OCCUPATIONS	8141
METAL HEAT-TREATING OCCUPATIONS	8133
Metal Machining, Inspecting and Testing Occupations	8316
METAL MACHINING OCCUPATIONS, N.E.C.	8319
METAL PROCESSING AND RELATED OCCUPATIONS, N.E.C.	8149
Metal Processing Inspecting, Testing, Grading, and Sampling Occupations	8146
Metal Processing: Occupations in Labouring and Other Elemental Work	8148
METAL ROLLING OCCUPATIONS	8135
Metal Shaping and Forming, Inspecting and Testing Occupations, Except Machining	8336
METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING, N.E.C.	8339
METAL SMELTING, CONVERTING AND REFINING FURNACEMEN	8131
Metal Spraying, Plating and Related Occupations	8143
METALWORKING-MACHINE OPERATORS, N.E.C.	8334
METEOROLOGISTS	2114
Methods and Organization Analysts	1173
MILK PROCESSING AND RELATED OCCUPATIONS	8223
MILLINERS, HAT AND CAP MAKERS	8557
Mineral Ores, Crushing and Grinding Occupations	8111
Mineral Ores, Melting and Roasting Occupations	8115
Mineral Ores, Mixing, Separating, Filtering and Related Occupations	8113
Mineral Ore Treating, Inspecting, Testing, Grading and Sampling Occupations	8116
Mineral Ore Treating Occupations in Labouring and Other Elemental Work	8118
MINERAL ORE TREATING OCCUPATIONS, N.E.C.	8119
MINING AND QUARRYING: CUTTING, HANDLING AND LOADING OCCUPATIONS ..	7717
Mining and Quarrying Including Oil and Gas Field Occupations in Labouring and Other Elemental Work	7718
MINING AND QUARRYING INCLUDING OIL AND GAS FIELD OCCUPATIONS, N.E.C.	7719
MINISTERS OF RELIGION	2511
MISCELLANEOUS CRAFTS AND EQUIPMENT OPERATING OCCUPATIONS, N.E.C.	9599
MIXING AND BLENDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS	8161

Mixing, Separating, Crushing and Grinding Occupations: Clay, Glass and Stone	8153
MIXING, SEPARATING, FILTERING AND RELATED OCCUPATIONS, MINERAL ORES	8113
MOTION-PICTURE PROJECTIONISTS	9557
Motion Pictures, Radio, Television and Theatre: Writers and Editors	3353
MOTORMEN AND DINKEYMEN, EXCEPT RAILWAY TRANSPORT	9193
MOTOR TRANSPORT OPERATING OCCUPATIONS, N.E.C.	9179
MOTOR VEHICLE FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.	8513
MOTOR-VEHICLE MECHANICS AND REPAIRMEN	8581
MOULDING, COREMAKING AND METAL CASTING OCCUPATIONS	8137
MOULDING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS	8573
Mouldmakers and Patternmakers, n.e.c.	8395
Museum, Library and Archival Sciences, n.e.c.	2359
Museum, Library and Archival Sciences, Supervisors ...	2350
Museum, Library and Archival Sciences Technicians ...	2353
MUSICAL INSTRUMENT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, N.E.C.	8599A

N

Navigators, Air Pilots and Flight Engineers	9111
Net, Trap and Line Fishermen	7313
NEWSBOYS	5143
Notaries and Lawyers	2343
NURSERY AND RELATED WORKERS	7195
NURSES, GRADUATE, EXCEPT SUPERVISORS ...	3131
NURSING AIDES AND ORDERLIES	3135
NURSING ASSISTANTS	3134
NURSING SUPERVISORS	3130
NURSING, THERAPY AND RELATED ASSISTING OCCUPATIONS, N.E.C.	3139
Nutritionists and Dietitians	3152

O

Occupational and Other Therapists	3137
OCCUPATIONS IN COMMUNITY AND RECREATIONAL SERVICES	2333A
OCCUPATIONS IN FINE AND COMMERCIAL ART, PHOTOGRAPHY AND RELATED FIELDS, N.E.C.	3319
OCCUPATIONS IN LABOURING AND ELEMENTAL WORK, OTHER PROCESSING	8298
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING	8178
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: CLAY, GLASS AND STONE PROCESSING AND FORMING	8158
OCCUPATIONS IN LABOURING AND OTHER	

ELEMENTAL WORK: EXCAVATING, GRADING AND PAVING	8718
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING AND REPAIRING, RUBBER, PLASTIC AND RELATED PRODUCTS	8578
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING AND REPAIRING, TEXTILE, FUR AND LEATHER PRODUCTS	8568
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING AND REPAIRING WOOD PRODUCTS	8548
Occupations in Labouring and Other Elemental Work: Fabricating, Assembling, Installing and Repairing Electrical, Electronic and Related Equipment	8538
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FARMING, HORTICULTURE AND ANIMAL HUSBANDRY	7198
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FOOD, BEVERAGE AND RELATED PROCESSING	8228
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, FORESTRY AND LOGGING	7518
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, MATERIAL-HANDLING, N.E.C.	9318
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, METAL PROCESSING	8148
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, MINERAL ORE TREATING	8118
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, MINING AND QUARRYING INCLUDING OIL AND GAS FIELDS	7718
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, OTHER CONSTRUCTION TRADES	8798
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, PRINTING AND RELATED ACTIVITIES	9518
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C.	8598
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, PULP AND PAPERMAKING	8258
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, SERVICES	6198
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, TEXTILE PROCESSING ..	8278
OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: WOOD PROCESSING, EXCEPT PAPER PULP	8238
OCCUPATIONS IN LAW AND JURISPRUDENCE, N.E.C.	2349

OCCUPATIONS IN LIBRARY, MUSEUM AND ARCHIVAL SCIENCES, N.E.C.	2359
OCCUPATIONS IN LIFE SCIENCES, N.E.C.	2139
OCCUPATIONS IN LODGING AND OTHER ACCOMMODATION, N.E.C.	6139
OCCUPATIONS IN MATHEMATICS, STATISTICS, SYSTEMS ANALYSIS AND RELATED FIELDS, N.E.C.	2189
OCCUPATIONS IN PHYSICAL SCIENCES, N.E.C.	2119
OCCUPATIONS IN PERFORMING AND AUDIOVISUAL ARTS, N.E.C.	3339
OCCUPATIONS IN RELIGION, N.E.C.	2519
OCCUPATIONS IN SOCIAL SCIENCES, N.E.C.	2319
OCCUPATIONS IN SOCIAL WORK AND RELATED FIELDS, N.E.C.	2339
OCCUPATIONS IN SPORT AND RECREATION, N.E.C.	3719
OCCUPATIONS IN WRITING, N.E.C.	3359
OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION, N.E.C.	1179
OFFICE MACHINE OPERATORS	4141
Officers, Deck	9151
Officers, Ship Engineer	9153
OFFICIALS AND ADMINISTRATORS UNIQUE TO GOVERNMENT, N.E.C.	1119
Officials and Referees	3711
Oil and Gas Occupations Including Mining and Quarrying, n.e.c.	7719
Oil and Gas Field Occupations in Labouring and Other Elemental Work, Including Mining and Quarrying ..	7718
Operating Occupations, Machine-Tool	8315
Operators, Metalworking-Machine, n.e.c.	8334
Optical Elements: Abrading, Polishing and Coating Occupations	8373B
Opticians, Dispensing	3154
OPTOMETRISTS	3153
ORCHARD, VINEYARD AND RELATED TREE AND SHRUB-CROP WORKERS	7185
Orderlies and Nursing Aides	3135
ORGANIZATION AND METHODS ANALYSTS	1173
OSTEOPATHS AND CHIROPRACTORS	3117
OTHER CLERICAL AND RELATED OCCUPATIONS, N.E.C.	4199
OTHER CONSTRUCTION TRADES, N.E.C.	8799E
Other Construction Trades Occupations in Labouring and Elemental Work	8798
OTHER FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C.	8529
OTHER FARMING, HORTICULTURAL AND ANIMAL-HUSBANDRY OCCUPATIONS, N.E.C.	7199B
OTHER MACHINING AND RELATED OCCUPATIONS, N.E.C.	8399
OTHER MANAGERS AND ADMINISTRATORS (except Chapter 1130-General Managers and other Senior Officials)	113/114
OTHER MATERIAL-HANDLING AND RELATED OCCUPATIONS, N.E.C.	9319
OTHER MECHANICS AND REPAIRMEN, N.E.C. ..	8589
OTHER OCCUPATIONS IN ARCHITECTURE AND ENGINEERING, N.E.C.	2169

Other Occupations in Architecture and Engineering, Supervisors	2160
OTHER OCCUPATIONS IN MEDICINE AND HEALTH, N.E.C.	3159
OTHER OCCUPATIONS IN SOCIAL SCIENCES AND RELATED FIELDS, N.E.C.	2399
OTHER PHOTOGRAPHERS AND CAMERAMEN	3315B
Other Processing Occupations in Labouring and Elemental Work	8298
OTHER PROCESSING OCCUPATIONS, N.E.C.	8299
OTHER PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, N.E.C.	8599B
OTHER ROCK AND SOIL DRILLING OCCUPATIONS	7713
OTHER SALES OCCUPATIONS, N.E.C.	5199
Other Senior Officials and General Managers	1130
OTHER SERVICE OCCUPATIONS, N.E.C.	6199
OTHER TEACHING AND RELATED OCCUPATIONS, N.E.C.	2799
OTHER TRANSPORT AND RELATED EQUIPMENT OPERATING OCCUPATIONS, N.E.C.	9199

P

PACKAGING OCCUPATIONS, N.E.C.	9317	Performing and Audiovisual Arts, Producers and Directors	3330
Packing and Preserving Occupations, Fruit and Vegetable Canning	8221	PERSONAL SERVICE OCCUPATIONS, N.E.C.	6149
Packing, Curing and Fish Canning Occupations		PERSONNEL AND RELATED OFFICERS	1174
Packing, Slaughtering and Meat Cutting, Canning and Curing Occupations	8215	PERSONNEL CLERKS	4195
PAINTERS, PAPERHANGERS AND RELATED OCCUPATIONS	8785	Petroleum, Chemicals, Rubber, Plastic and Related Materials Processing: Inspecting, Testing and Sampling Occupations	8176
PAINTERS, SCULPTORS AND RELATED ARTISTS	3311	Petroleum, Chemicals, Rubber, Plastic and Related Materials Processing Occupations in Labouring and Other Elemental Work	8178
PAINTING AND DECORATING OCCUPATIONS, EXCEPT CONSTRUCTION	8595	Petroleum, Chemicals, Rubber, Plastic and Related Materials Processing Occupations, n.e.c.	8179
Paperhangers, Painters and Related Occupations	8785	PHARMACISTS	3151
PAPERMAKING AND FINISHING OCCUPATIONS	8253	PHOTOENGRAVING AND RELATED OCCUPATIONS	9515
Papermaking and Pulp, Inspecting, Grading and Sampling Occupations	8256	PHOTOGRAPHERS AND CAMERAMEN	3315A
Papermaking and Pulp Occupations in Labouring and Other Elemental Work	8258	Photographers and Cameramen, Other	3315B
Papermaking, Pulp and Related Occupations, n.e.c.	8259	PHOTOGRAPHIC PROCESSING OCCUPATIONS	9591
PAPER PRODUCT FABRICATING AND ASSEMBLING OCCUPATIONS	8593	Photography, Fine and Commercial Art and Related Fields, n.e.c.	3319
PATTERNMAKERS AND MOULDMAKERS, N.E.C.	8395	Physical Sciences Occupations, n.e.c.	2119
PATTERNMAKING, MARKING AND CUTTING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS	8551	PHYSICAL SCIENCES TECHNOLOGISTS AND TECHNICIANS	2117
Patternmaking Occupations, Wood	8351	PHYSICIANS AND SURGEONS	3111
Paving, Excavating and Grading Occupations in Labouring and Other Elemental Work	8718	PHYSICISTS	2113
Paving, Excavating, Grading and Related Occupations, n.e.c.	8719	PHYSIOTHERAPISTS, OCCUPATIONAL AND OTHER THERAPISTS	3137
PAVING, SURFACING AND RELATED OCCUPATIONS	8713	PIPEFITTING, PLUMBING AND RELATED OCCUPATIONS, N.E.C.	8791
Pelt and Hide Processing Occupations	8295	Pipeline and Pumping Equipment Operating Occupations	9537
Performing and Audiovisual Arts Occupations, n.e.c.	3339	PLANING, TURNING, SHAPING AND RELATED WOOD MACHINING OCCUPATIONS	8355
		PLASTERERS AND RELATED OCCUPATIONS	8784
		Plastic, Chemicals, Petroleum, Rubber and Related Materials Processing: Inspecting, Testing and Sampling Occupations	8176
		Plastic, Chemicals, Petroleum, Rubber and Related Materials Processing Occupations in Labouring and Other Elemental Work	8178
		Plastic, Chemicals, Petroleum, Rubber and Related Materials Processing Occupations, n.e.c.	8179
		Plastic, Rubber and Related Products Bonding and Cementing Occupations	8571
		Plastic, Rubber and Related Products Cutting and Finishing Occupations	8575
		Plastic, Rubber and Related Products, Fabricating, Assembling and Repairing Occupations in Labouring and Other Elemental Work	8578
		Plastic, Rubber and Related Products, Fabricating, Assembling and Repairing Occupations, n.e.c.	8579
		Plastic, Rubber and Related Products, Fabricating, Assembling and Repairing: Inspecting, Testing, Grading and Sampling Occupations	8576
		Plastic, Rubber and Related Products, Moulding Occupations	8573
		Platers, Boilermakers and Structural-Metal Workers	8337
		PLATING, METAL SPRAYING AND RELATED OCCUPATIONS	8143
		Plumbing, Pipefitting and Related Occupations, n.e.c.	8791

PLYWOOD MAKING AND RELATED OCCUPATIONS	8233
POLICEMEN AND DETECTIVES, GOVERNMENT	6112
POLICEMEN AND INVESTIGATORS, PRIVATE ..	6113
Polishing, Abrading and Coating Occupations: Optical Elements	8373B
Polishing and Abrading Occupations: Flat-Glass and Glassware	8373C
Polishing and Abrading Occupations: Stone, Cement, Abrasives and Clay	8373A
Polishing, Filing, Grinding, Buffing and Cleaning Occupations, n.e.c.	8393
Porters and Bellmen, Sleeping-Car and Baggage	6135
POSTMASTERS	1115
Postal and Mail Clerks	4173
POST-SECONDARY SCHOOL TEACHERS, N.E.C.	2793
POULTRY WORKERS, FARM	7193
POWER STATION OPERATORS	9531
PRECISION INSTRUMENTS AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.	8527
PRECISION-INSTRUMENT MECHANICS AND REPAIRMEN	8588
Preserving and Packing Occupations, Fruit and Vegetable Canning	8221
PRESSING OCCUPATIONS	6165
Printing and Related Activities, Occupations in Labouring and Other Elemental Work	9518
PRINTING AND RELATED OCCUPATIONS, N.E.C.	9519
PRINTING-ENGRAVING, EXCEPT PHOTOENGRAVING OCCUPATIONS	9514
PRINTING PRESS OCCUPATIONS	9512
Processing; Inspecting, Testing, Grading and Sampling Occupations, n.e.c.	8296
Processing Occupations, Hide and Pelt	8295
Processing Occupations, Other, n.e.c.	8299
Processing Occupations, Tobacco	8293
PRODUCERS AND DIRECTORS, PERFORMING AND AUDIOVISUAL ARTS	3330
PRODUCT AND INTERIOR DESIGNERS	3313
Product Fabricating, Assembling and Repairing, Inspecting, Testing and Grading Occupations, n.e.c.	8596
Product Fabricating, Assembling and Repairing, Occupations in Labouring and Other Elemental Work, n.e.c.	8598
PRODUCTION CLERKS	4151
PRODUCTION, CONSTRUCTION, INSTALLATION, OPERATION AND MAINTENANCE ENGINEERS (except chapter 2141)	214/215B
Projectionists, Motion Picture	9557
PROTECTIVE SERVICE OCCUPATIONS, N.E.C.	6119
PSYCHOLOGISTS	2315
PULP AND PAPERMAKING AND RELATED OCCUPATIONS, N.E.C.	8259
Pulp and Papermaking; Inspecting, Testing, Grading and Sampling Occupations	8256
Pulp and Papermaking Occupations in Labouring and Other Elemental Work	8258
Pulp Preparing Occupations, Cellulose	8251

PUMPING AND PIPELINE EQUIPMENT OPERATING OCCUPATIONS	9537
PURCHASING OFFICERS AND BUYERS, EXCEPT WHOLESALE AND RETAIL TRADE ...	1175

Q

Quarrying and Mining: Cutting, Handling and Loading Occupations	7717
Quarrying and Mining Including Oil and Gas Field Occupations in Labouring and Other Elemental Work	7718
Quarrying and Mining Including Oil and Gas Field Occupations, n.e.c.	7719

R

RADIO AND TELEVISION ANNOUNCERS	3337
RADIO AND TELEVISION BROADCASTING EQUIPMENT OPERATORS	9551
RADIO AND TELEVISION SERVICE REPAIRMEN	8537
RADIOLOGICAL TECHNOLOGISTS AND TECHNICIANS	3155
Radio, Television, Theatre and Motion Pictures: Writers and Editors	3353
RAIL TRANSPORT EQUIPMENT MECHANICS AND REPAIRMEN	8583
Railway Conductors and Brakemen	9133
RAILWAY SECTIONMEN AND TRACKMEN	8715
RAILWAY TRANSPORT OPERATING OCCUPATIONS, N.E.C.	9139
RAILWAY TRANSPORT OPERATING SUPPORT OCCUPATIONS	9135
REAL ESTATE SALESMEN	5172
Receiving and Shipping Clerks	4153
RECEPTION, INFORMATION, MAIL AND MESSAGE DISTRIBUTION OCCUPATIONS, N.E.C.	4179
RECEPTIONISTS AND INFORMATION CLERKS	4171
Recreational Services, Community	2333A
Recreation and Sport, Attendants	3715
Recreation and Sport; Coaches, Trainers, Instructors and Managers	3710
Recreation and Sport Occupations, n.e.c.	3719
Reeling and Textile Winding Occupations	8265
REFEREES AND RELATED OFFICIALS	3711
Refining and Converting Furnacemen, Metal Smelting	8131
Refrigeration and Air-Conditioning Mechanics, Commercial and Industrial	8799C
Regulatory Officers and Inspectors, Government	1116
Regulatory Officers and Inspectors, Non-Government ..	1176
Religious Occupations, n.e.c.	2519
Repairing and Installing Occupations, Electrical and Related Equipment, n.e.c.	8533
Repairing and Installing Occupations, Electronic and Related Equipment, n.e.c.	8535
Repairing and Installing Occupations, Wire Communications and Related Equipment	8735

Repairing, Fabricating and Assembling Occupations, Jewellery and Silverware	8591
Repairing, Fabricating and Assembling Occupations, Musical Instruments, n.e.c.	8599A
Repairing, Fabricating and Assembling Occupations, Other Products, n.e.c.	8599B
Repairing, Fabricating and Assembling Occupations, Rubber, Plastic and Related Products, n.e.c.	8579
Repairing, Fabricating and Assembling Occupations, Textile, Fur and Leather Products, n.e.c.	8569
Repairing, Fabricating and Assembling, Rubber, Plastic and Related Products, Inspecting, Testing, Grading and Sampling Occupations	8576
Repairing, Fabricating and Assembling, Rubber, Plastic, and Related Products; Occupations in Labouring and Other Elemental Work	8578
Repairing, Fabricating and Assembling, Textile, Fur and Leather Products, Inspecting, Grading and Sampling Occupations	8566
Repairing, Fabricating and Assembling, Textile, Fur and Leather Products, Occupations in Labouring and Other Elemental Work	8568
Repairing, Fabricating, Assembling and Installing Electrical, Electronic and Related Equipment, Inspecting and Testing Occupations	8536
Repairing, Fabricating, Assembling and Installing Electrical, Electronic and Related Equipment: Occupations in Labouring and Other Elemental Work	8538
Repairmen and Electricians, Construction	8733
Repairmen and Installers, Elevator	8799A
Repairmen and Installers, Furnace	8799B
Repairmen and Mechanics, Aircraft	8582
Repairmen and Mechanics, Business and Commercial Machine	8585
Repairmen and Mechanics, Industrial, Farm and Construction Machinery	8584
Repairmen and Mechanics, Motor-Vehicle	8581
Repairmen and Mechanics, Other, n.e.c.	8589
Repairmen and Mechanics, Precision-Instrument	8588
Repairmen and Mechanics, Rail Transport Equipment	8583
Repairmen, Watch and Clock	8587
Reproduction, Sound and Video Recording Equipment Operators	9555
RESEARCH, DESIGN AND DEVELOPMENT	
ENGINEERS (except chapter 2141)	214/215A
Retail and Wholesale Trade Buyers	5191
Roasting and Melting Occupations, Mineral Ores	8115
ROASTING, COOKING AND DRYING	
OCCUPATIONS, CHEMICALS AND RELATED MATERIALS	
Rock and Soil Drilling Occupations, Other	7713
Roofing, Waterproofing and Related Occupations	8787
ROTARY WELL-DRILLING AND RELATED OCCUPATIONS	
Rubber, Chemicals, Petroleum, Plastic and Related Materials Processing: Inspecting, Testing and Sampling Occupations	8176
Rubber, Chemicals, Petroleum, Plastic and Related Materials Processing Occupations in Labouring and Other Elemental Work	8178

Rubber, Chemicals, Petroleum, Plastic and Related Materials Processing Occupations, n.e.c.	8179
Rubber, Plastic and Related Products, Bonding and Cementing Occupations	8571
Rubber, Plastic and Related Products, Cutting and Finishing Occupations	8575
Rubber, Plastic and Related Products, Fabricating, Assembling and Repairing: Occupations in Labouring and Other Elemental Work	8578
Rubber, Plastic and Related Products, Fabricating, Assembling and Repairing Occupations, n.e.c.	8579
Rubber, Plastic and Related Products, Fabricating, Assembling, Repairing, Inspecting, Testing, Grading and Sampling Occupations	8576
Rubber, Plastic and Related Products, Moulding Occupations	8573

S

SALES CLERKS, COMMODITIES	5137
Salesmen, Advertising	5174
Salesmen and Agents, Insurance	5171
SALESMEN AND SALESPERSONS,	
COMMODITIES, N.E.C.	5135
SALESMEN AND TRADERS, SECURITIES	5173
Salesmen, Business Services	5177
Salesmen, Door-to-Door and Street Vendors	5141
Salesmen-Driver	5193
Salesmen, Real Estate	5172
SALES OCCUPATIONS, COMMODITIES, N.E.C.	5149
Sales Occupations, Other, n.e.c.	5199
SALES OCCUPATIONS: SERVICES, N.E.C.	5179
Salespersons and Salesmen, Commodities, n.e.c.	5135
Sampling, Inspecting and Grading Occupations:	
Fabricating, Assembling and Repairing, Textile, Fur and Leather Products	8566
Sampling, Inspecting and Testing Occupations:	
Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing	8176
Sampling, Inspecting, Testing and Grading Occupations: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products	8576
Sampling, Inspecting, Testing and Grading Occupations: Food, Beverage and Related Processing	8226
Sampling, Inspecting, Testing and Grading Occupations, Metal Processing	8146
Sampling, Inspecting, Testing and Grading Occupations, Mineral Ore Treating	8116
Sampling, Inspecting, Testing and Grading Occupations, n.e.c.	9916
Sampling, Inspecting, Testing and Grading Occupations, Processing, n.e.c.	8296
Sampling, Inspecting, Testing and Grading Occupations, Pulp and Papermaking	8256
Sampling, Inspecting, Testing and Grading Occupations, Textile Processing	8276
Sanding Occupations, Wood	8357
Sanitation and Water Utilities Equipment Operating Occupations	9535

SAWMILL SAWYERS AND RELATED OCCUPATIONS	8231	Sport and Recreation Occupations, n.e.c.	3719
Scheduling, Material Recording and Distributing Occupations, n.e.c.	4159	STATIONARY ENGINE AND AUXILIARY EQUIPMENT OPERATING AND MAINTAINING OCCUPATIONS	9533
School Teachers, Post-Secondary, n.e.c.	2793	Station, Ticket and Freight Agents and Travel Clerks ..	4193
School Teachers, Secondary	2733	STATISTICAL CLERKS	4137
Sculptors, Painters and Related Artists	3311	Statisticians, Mathematicians and Actuaries	2181
SECONDARY SCHOOL TEACHERS	2733	Statistics, Mathematics, Systems Analysis and Related Fields, n.e.c.	2189
SECRETARIES AND STENOGRAPHERS	4111	Stenographes and Secretaries	4111
Sectionmen and Trackmen, Railway	8715	STEREOTYPING AND ELECTROTYPING OCCUPATIONS	9513
Securities Salesmen and Traders	5173	Stevedores, Longshoremen and Freight Handlers	9313
Senior Officials and General Managers	1130	Stewards and Hostesses, Except Food and Beverage ..	6145
SEPARATING, CRUSHING, GRINDING AND MIXING OCCUPATIONS: CLAY, GLASS AND STONE	8153	Stewards, Waiters and Hostesses, Food and Beverage ..	6125
Separating, Filtering and Straining Occupations, Chemicals and Related Materials	8163	STOCK CLERKS AND RELATED OCCUPATIONS	4155
Separating, Mixing, Filtering and Related Occupations, Mineral Ores	8113	Stone, Cement, Abrasives and Clay Abrading and Polishing Occupations	8373A
Service Occupations, Other, n.e.c.	6199	Stone, Clay and Glass Furnacemen and Kilnmen	8151
SERVICE STATION ATTENDANTS	5145	Stone, Clay and Glass Processing and Forming: Inspecting, Testing and Grading Occupations	8156
Setting-Up Occupations, Machinist and Machine-Tool ..	8313	Stone, Clay and Glass Processing and Forming Occupations in Labouring and Other Elemental Work	8158
SEWING MACHINE OPERATORS, TEXTILE AND SIMILAR MATERIALS	8563	Stone, Clay and Glass Processing, Forming and Related Occupations, n.e.c.	8159
Shaping and Cutting Occupations: Clay, Glass, Stone and Related Materials	8371	Stone, Clay and Glass Separating, Crushing, Grinding and Mixing Occupations	8153
Shaping, Planing, Turning and Related Wood Machining Occupations	8355	Stone, Clay, Glass and Related Materials, Cutting and Shaping Occupations	8371
SHEET-METAL WORKERS	8333	Stone, Clay, Glass and Related Materials Machining, Inspecting Occupations	8376
SHIPBUILDING OCCUPATIONS	8592A	Stone, Clay, Glass and Related Materials Machining Occupations, n.e.c.	8379
Ship, Deck Crew	9155B	Stone Forming Occupations	8155C
Ship, Engine and Boiler-Room Crew	9157	Stone Masons and Brick and Tile Setters	8782
Ship, Engineer Officers	9153	Straining, Filtering and Separating Occupations, Chemicals and Related Materials	8163
SHIPPING AND RECEIVING CLERKS	4153	Street Railway and Subway Operating Occupations ..	9191
SHIP'S CARPENTERS	9155A	STREET VENDORS AND DOOR-TO-DOOR SALESMEN	5141
SHOEMAKING AND REPAIRING OCCUPATIONS	8561	STRUCTURAL-METAL ERECTORS	8793
Shrub-Crop and Related Tree, Orchard and Vineyard Workers	7185	Structural-Metal Workers, Boilermakers and Platers ..	8337
Silverware and Jewellery Fabricating, Assembling and Repairing Occupations	8591	Subliming, Distilling and Carbonizing Occupations, Chemicals and Related Materials	8165
SLAUGHTERING AND MEAT CUTTING, CANNING, CURING AND PACKING OCCUPATIONS	8215	SUBWAY AND STREET RAILWAY OPERATING OCCUPATIONS	9191
SLEEPING-CAR AND BAGGAGE PORTERS, AND BELLMEN	6135	SUGAR PROCESSING AND RELATED OCCUPATIONS	8225
Small Domestic Animal Breeders	711B	Supervisors and Managing Supervisors, Sales Occupations (includes 5130, 5170, 5190)	510
Social Sciences and Related Fields Occupations, n.e.c. ..	2399	Supervisors and Managing Supervisors, Service Occupations (includes 6120, 6130, 6160, 6190)	610
Social Scientists Related, Sociologists and Anthropologists	2313	Supervisors, Clerical	410
SOCIAL-SERVICE ASSISTANTS	2333B	SUPERVISORS, NURSING OCCUPATIONS	3130
Social Work and Related Fields, n.e.c.	2339	SUPERVISORS: OCCUPATIONS IN LIBRARY, MUSEUM AND ARCHIVAL SCIENCES	2350
SOCIAL WORKERS	2331	SUPERVISORS: OTHER OCCUPATIONS IN ARCHITECTURE AND ENGINEERING	2160
SOCIOLOGISTS, ANTHROPOLOGISTS AND RELATED SOCIAL SCIENTISTS	2313	Surfacing, Paving and Related Occupations	8713
Soil and Rock Drilling Occupations, Other	7713	Surgeons and Physicians	3111
SOUND AND VIDEO RECORDING AND REPRODUCTION EQUIPMENT OPERATORS ..	9555		
Spinning and Twisting Occupations, Textile	8263		
Sport and Recreation, Attendants	3715		
Sport and Recreation; Coaches, Trainers, Instructors and Managers	3710		

SURVEYORS	2161
SYSTEMS ANALYSTS, COMPUTER PROGRAMMERS AND RELATED OCCUPATIONS	2183
Systems Analysis, Mathematics, Statistics and Related Fields, n.e.c.	2189

T

TAILORS AND DRESSMAKERS	8553
TAXI DRIVERS AND CHAUFFEURS	9173
Teachers, Community College and Vocational School ..	2791
Teachers, Elementary and Kindergarten	2731
Teachers, Fine Arts	2792
TEACHERS OF EXCEPTIONAL STUDENTS, N.E.C.	2795
Teachers, Post-Secondary School, n.e.c.	2793
Teachers, Secondary School	2733
Teachers, University	2711
Teaching and Related Occupations, n.e.c.	2799
Teaching and Related Occupations, University	2719
TECHNICAL SALESMEN AND RELATED ADVISERS	5131
Technicians, Assistants and Hygienists, Dental	3157
Technicians and Physical Sciences Technologists	2117
Technicians and Technologists, Architectural and Engineering	2165
Technicians and Technologists Life Sciences	2135
Technicians and Technologists, Medical Laboratory	3156
Technicians and Technologists, Radiological	3155
TECHNICIANS IN LIBRARY, MUSEUM AND ARCHIVAL SCIENCES	2353
Technologists and Technicians, Architectural and Engineering	2165
Technologists and Technicians, Life Sciences	2135
Technologists and Technicians, Medical Laboratory	3156
Technologists and Technicians, Physical Sciences	2117
Technologists and Technicians, Radiological	3155
TELEGRAPH OPERATORS	9553
TELEPHONE OPERATORS	4175
Television and Radio Announcers	3337
Television and Radio Broadcasting Equipment Operators	9551
Television and Radio Service Repairmen	8537
Television, Radio, Theatre and Motion Pictures: Writers and Editors	3353
TELLERS AND CASHIERS	4133
Testing and Inspecting Occupations, Construction, Except Electrical	8796
Testing and Inspecting Occupations: Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing	8736
Testing and Inspecting Occupations, Equipment Repair, n.e.c.	8586
Testing and Inspecting Occupations, Fabricating and Assembling Metal Products, n.e.c.	8526
Testing and Inspecting Occupations: Fabricating, Assembling, Installing and Repairing Electrical, Electronic and Related Equipment	8536
Testing and Inspecting Occupations, Metal Machining ..	8316

Testing and Inspecting Occupations, Metal Shaping and Forming, Except Machining	8336
Testing, Grading, Inspecting and Sampling Occupations, Textile Processing	8276
Testing, Inspecting and Grading Occupations: Clay, Glass and Stone Processing and Forming	8156
Testing, Inspecting and Grading Occupations: Product Fabricating, Assembling and Repairing, n.e.c.	8596
Testing, Inspecting and Grading Occupations: Wood Processing, Except Paper Pulp	8236
Testing, Inspecting and Sampling Occupations: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing	8176
Testing, Inspecting, Grading and Sampling Occupations: Fabricating, Assembling and Repairing Rubber, Plastic and Related Products	8576
Testing, Inspecting, Grading and Sampling Occupations: Food, Beverage and Related Processing	8226
Testing, Inspecting, Grading and Sampling Occupations, Metal Processing	8146
Testing, Inspecting, Grading and Sampling Occupations, Mineral Ore Treating	8116
Testing, Inspecting, Grading and Sampling Occupations, n.e.c.	9916
Testing, Inspecting, Grading and Sampling Occupations, Processing, n.e.c.	8296
Testing, Inspecting, Grading and Sampling Occupations, Pulp and Papermaking	8256
Textile and Similar Materials, Sewing Machine Operators	8563
TEXTILE BLEACHING AND DYEING OCCUPATIONS	8273
TEXTILE FIBRE PREPARING OCCUPATIONS	8261
TEXTILE FINISHING AND CALENDERING OCCUPATIONS	8275
Textile, Fur and Leather Products, Fabricating, Assembling and Repairing Occupations in Labouring and Other Elemental Work	8568
Textile, Fur and Leather Products, Fabricating, Assembling and Repairing Occupations, n.e.c.	8569
Textile, Fur and Leather Products: Fabricating, Assembling, Repairing, Inspecting, Grading and Sampling Occupations	8566
Textile, Fur and Leather Products, Patternmaking, Marking and Cutting Occupations	8551
Textile Processing, Inspecting, Testing, Grading and Sampling Occupations	8276
Textile Processing Occupations in Labouring and Other Elemental Work	8278
TEXTILE PROCESSING OCCUPATIONS, N.E.C.	8279
TEXTILE SPINNING AND TWISTING OCCUPATIONS	8263
TEXTILE WEAVING OCCUPATIONS	8267
TEXTILE WINDING AND REELING OCCUPATIONS	8265
Theatre, Radio, Television and Motion Pictures: Writers and Editors	3353
Therapists, Occupational, Physiotherapists and Other ..	3137
Therapy and Related Assisting Occupations, Nursing, n.e.c.	3139
Ticket, Station and Freight Agents and Travel Clerks ..	4193

Tile Setter and Brick and Stone Masons	8782
TIMBER CUTTING AND RELATED	
OCCUPATIONS	7513
TOBACCO PROCESSING OCCUPATIONS	8293
TOOL AND DIE-MAKING OCCUPATIONS	8311
Trackmen and Sectionmen, Railway	8715
Traders and Salesmen, Securities	5173
Trainers, Coaches, Instructors and Managers, Sport and Recreation	3710
Training Officers and Instructors, n.e.c.	2797B
TRANSLATORS AND INTERPRETERS	3355
Trap, Net and Line Fishermen	7313
Trapping, Fishing, Hunting and Related Occupations, n.e.c.	7319
Trapping, Hunting and Related Occupations	7315
TRAVEL CLERKS, TICKET, STATION AND	
FREIGHT AGENTS	4193
Treating and Health Diagnosing Occupations, n.e.c.	3119
TRUCK DRIVERS	9175
Turning, Planing, Shaping and Related Wood Machining Occupations	8355
Twisting and Textile Spinning Occupations	8263
TYPESETTING AND COMPOSING	
OCCUPATIONS	9511
TYPISTS AND CLERK-TYPISTS	4113

U

UNIVERSITY TEACHERS	2711
UNIVERSITY TEACHING AND RELATED	
OCCUPATIONS, N.E.C.	2719
UPHOLSTERERS	8562

V

Vegetable and Fruit Canning, Preserving and Packing Occupations	8221
Vegetable-Growing and Field Crop Workers	7183
VETERINARIANS	3115
Video and Sound Recording and Reproduction Equipment Operators	9555
Vineyard, Orchard and Related Tree and Shrub-Crop Workers	7185
Vocal, Musical Work	3332B
Vocational and Educational Counsellors	2391
Vocational School and Community College Teachers ...	2791

W

WAITERS, HOSTESSES AND STEWARDS, FOOD	
AND BEVERAGE	6125
WATCH AND CLOCK REPAIRMEN	8587
Watchmen and Guards	6115B
WATER AND SANITATION UTILITIES	
EQUIPMENT OPERATING OCCUPATIONS	9535
Waterproofing, Roofing and Related Occupations	8787
WATER TRANSPORT OPERATING	
OCCUPATIONS, N.E.C.	9159
Weaving Occupations, Textile	8267
WEIGHERS	4157
WELDING AND FLAME CUTTING	
OCCUPATIONS	8335
Wholesale and Retail Trade, Buyers	5191
Winding and Reeling Occupations, Textile	8265
WIRE COMMUNICATIONS AND RELATED	
EQUIPMENT INSTALLING AND REPAIRING	
OCCUPATIONS	8735
Wire Communications, Electrical Power and Lighting Equipment Erecting, Installing and Repairing:	
Inspecting and Testing Occupations	8736
Wire Communications, Electrical Power and Lighting Equipment Erecting, Installing and Repairing	
Occupations, n.e.c.	8739
Wood Furniture and Cabinet Makers	8541
Wood Machining: Inspecting Occupations	8356
WOOD MACHINING OCCUPATIONS, N.E.C.	8359
WOOD PATTERNMAKING OCCUPATIONS	8351
Wood Processing, Inspecting, Testing and Grading Occupations, Except Paper Pulp	8236
WOOD PROCESSING OCCUPATIONS, EXCEPT	
PAPER PULP, N.E.C.	8239
Wood Processing Occupations in Labouring and Other Elemental Work, Except Paper Pulp	8238
Wood Products, Fabricating, Assembling and Repairing Occupations, n.e.c.	8549
Wood Products, Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing	8548
WOOD SANDING OCCUPATIONS	8357
WOOD SAWING AND RELATED	
OCCUPATIONS, EXCEPT SAWMILL	8353
WOOD TREATING OCCUPATIONS	8235
WORKERS, SOCIAL	2331
WRITERS AND EDITORS, PUBLICATION	3351
WRITERS AND EDITORS: RADIO, TELEVISION, THEATRE AND MOTION PICTURES	3353
Writing Occupations, n.e.c.	3359

GOVERNMENT ADMINISTRATORS

This group includes occupations, unique to government, concerned with carrying out senior and middle managerial and administrative activities.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
1113-110	EXECUTIVE ADMINISTRATOR, GOVERNMENT AGENCIES (gov. serv.)	<u>1</u>	<u>1</u>	<u>2</u>	4	4	4	4	4	4	5	5	S 56	I	5	9	265	457901
1113-114	EXECUTIVE ADMINISTRATOR, GOVERNMENT DEPARTMENT(gov. serv.)	<u>1</u>	<u>1</u>	<u>2</u>	4	4	4	4	4	4	5	5	S 56	I	5	9	265	457901
1113-118	SENIOR ADMINISTRATOR, GOVERNMENT AGENCIES (gov. serv.)	<u>1</u>	<u>1</u>	<u>2</u>	4	4	4	4	4	4	5	5	S 56	I	5	8	265	457901
1113-122	SENIOR ADMINISTRATOR, GOVERNMENT DEPARTMENT (gov. serv.)	<u>1</u>	<u>1</u>	<u>2</u>	4	4	4	4	4	4	5	5	S 56	I	5	8	265	457901
1113-126	ADMINISTRATOR, GOVERNMENT AGENCIES (gov. serv.)	<u>2</u>	<u>2</u>	<u>2</u>	4	4	4	4	4	4	5	5	S 56	I	5	7	265	457901
1113-130	ADMINISTRATOR, GOVERNMENT DEPARTMENT (gov. serv.)	<u>2</u>	<u>2</u>	<u>2</u>	4	4	4	4	4	4	5	5	S 56	I	5	7	265	457901

POSTMASTERS

WORK PERFORMED

This chapter includes occupations concerned with carrying out managerial and administrative activities in a post office, or providing postal services in a metropolitan or rural postal area. Worker functions include: coordinating procedures to implement policies and directives of senior management; negotiating with representatives of industrial and business organizations and other levels of government to resolve matters relating to postal operations, services and programs; and supervising the training and development programs of post office staff. Work activities include: planning, organizing, directing and controlling the activities of post offices and mail services in an urban or rural area; investigating complaints and irregularities in postal services and determining corrective measures; and enforcing postal regulations.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
1115-110	POSTAL AREA MANAGER (gov. serv.)	4	8	1115-114	POSTMASTER (gov. serv.)	4	7

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>2</u>	4	4	4	5	5		S 56	I	4	8-7	265	45901
					<u>3</u>												

APTITUDES AND CAPACITIES

- Postmasters require:

 - learning ability to understand and apply postal regulations and procedures, and to make administrative decisions, and judgments concerning the interpretation and implementation of postal regulations;
 - verbal ability to express ideas clearly in written or oral form especially when conferring with the public, addressing business
- meetings, conducting negotiations on behalf of the post office department, and conducting training seminars;
 - numerical ability to administer the financial operations of a post office, prepare financial statements and estimates, and control numerical records;
 - clerical perception to note pertinent detail in instructions and regulations, and to avoid errors in financial estimates and reports.

TRAINING AND ENTRY REQUIREMENTS

- Postmasters within the Federal Public Service normally require:

 - completion of secondary school education; plus
 - four to ten years of experience in various occupations in a post office.
- Those who operate post offices in conjunction with another business normally are required to provide proof of competence in postal services and no minimum training requirements are stipulated.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement	Transfer
Postmasters with sufficient managerial experience may advance to POSTAL AREA MANAGER.	Transfers may be to 1116-110 SUPERVISOR, INSPECTORS AND REGULATORY OFFICERS and to 1116-142 POSTAL-SERVICE INSPECTOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Postmasters require significant interests in, and dispositions for work involving the following:

Interests

- business contacts with people;
- dealing with people and the communication of ideas;
- work resulting in the prestige or esteem of others, such as working in an administrative capacity, representing senior management on boards or committees concerned with post-office matters, and serving the public.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria, such as making administrative decisions or interpreting postal regulations;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change.

GROUP 1116

INSPECTORS AND REGULATORY OFFICERS, GOVERNMENT

This group includes occupations concerned with enforcing and advising on health, safety, and other regulations in the capacity of municipal, provincial, or federal government inspectors or regulatory officers.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS													
		Aptitudes										PA	EC	GED	SVP
		G	V	N	S	P	Q	K	F	M	E	C	Ints.		
1116-110	SUPERVISOR, INSPECTORS AND REGULATORY OFFICERS (gov. serv.)	<u>2</u>	<u>2</u>	4	4	<u>3</u>	<u>3</u>	4	4	4	5	4	S-L 567	I	5-4* 8-7* 25 4509
1116-114	CORONER (gov. serv.)	<u>1</u>	<u>1</u>	3	<u>2</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>2</u>	3	5	<u>2</u>	L 56	I	6 8 671 4590Y
1116-118	EXCISE-TAX INSPECTOR (gov. serv.)	<u>2</u>	<u>2</u>	<u>2</u>	4	3	<u>2</u>	4	4	4	5	5	S 56	I	5 7 26 09Y5
1116-122	HUMAN-RIGHTS-COMMISSION OFFICER (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 56	I	5 7 246 590Y
1116-126	CUSTOMS INSPECTOR (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	4	3	5	3	L 567	I	5 7 26 905Y
1116-130	IMMIGRATION INSPECTOR (gov. serv.)	<u>2</u>	<u>2</u>	4	4	4	<u>3</u>	4	4	4	5	5	L 56	I	4 7 26 50Y9
1116-134	RENTALSMAN (gov. serv.)	<u>2</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 56	I	4 7 264 5790Y
1116-138	SAFETY INSPECTOR (gov. serv.)	<u>2</u>	<u>3</u>	3	3	<u>2</u>	3	4	4	4	5	4	L 23567	B 67	4 7 21 0Y95
1116-142	POSTAL-SERVICE INSPECTOR (gov. serv.)	<u>2</u>	<u>3</u>	3	3	4	3	4	4	4	5	5	L 56	I	4 7 21 09Y5
1116-146	PRIMARY-PRODUCTS INSPECTOR, ANIMALS (gov. serv.)	<u>2</u>	<u>3</u>	4	4	<u>2</u>	4	4	4	<u>3</u>	5	<u>3</u>	L 4567	B 67	4 7 217 09Y5
1116-150	PRIMARY-PRODUCTS INSPECTOR, PLANTS (gov. serv.)	<u>2</u>	<u>3</u>	4	4	<u>2</u>		4	4	4	5	<u>3</u>	L 4567	B 67	4 7 21 09Y5
1116-154	MOTOR-TRANSPORT REGULATIONS OFFICER (gov. serv.)	<u>3</u>	<u>3</u>	4	3	<u>2</u>	3	4	4	4	4	4	S 567	I	4 6 26 590Y
1116-158	INSPECTOR, HEALTH STANDARDS (gov. serv.)	<u>3</u>	<u>3</u>	4	3	<u>3</u>	3	4	4	4	5	4	L 567	B	4 6 62 590Y
1116-162	FISHERIES INSPECTOR (gov. serv.)	<u>3</u>	<u>3</u>	3	4	<u>3</u>	4	4	4	4	5	<u>3</u>	L 4567	B 2	4 6 62 90Y5
1116-166	FIRE INSPECTOR (gov. serv.)	<u>3</u>	<u>3</u>	4	3	<u>3</u>	4	4	4	4	5	5	L 2567	B 6	4 6 26 950Y

OFFICIALS AND ADMINISTRATORS UNIQUE TO GOVERNMENT, N.E.C.

This group includes occupations, not elsewhere classified, concerned with administering a wide variety of activities unique to federal, provincial and municipal governments.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Federal Officials and Administrators, Unique to Government</i>																		
1119-110	FOREIGN-SERVICE OFFICER (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 56	I	5	7	265	457901
1119-114	CO-ORDINATOR, BILINGUAL-SERVICE (gov. serv.)	<u>2</u>	<u>2</u>	4	4	4	<u>3</u>	4	4	4	5	5	S 56	I	5	7	26	5901
1119-122	VETRANS' SERVICE OFFICER (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S	I	4	7	265	590
1119-126	REFEREE, UNEMPLOYMENT-INSURANCE APPEALS (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	4	4	4	4	5	5	S 5	I	4	7	26	590
<i>Provincial Officials and Administrators, Unique to Government</i>																		
1119-146	OMBUDSMAN (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	3	4	4	4	5	5	S 56	I	5	8	265	45901
1119-150	EXTENSION SUPERVISOR (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	3	4	4	4	5	5	S 56	I	5	7	265	45901
1119-154	PUBLIC TRUSTEE (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	4	4	4	4	5	5	S 5	I	5	7	265	45901
1119-158	AGRICULTURAL REPRESENTATIVE (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	3	3	4	4	4	4	5	4	L 4567	B	5	8*	265	45901
1119-166	WELFARE AND COMPENSATION OFFICER (gov. serv.)	<u>2</u>	<u>3</u>	<u>3</u>	4	4	3	4	4	4	5	5	L 56	I	4	6	26	590
<i>Municipal Officials and Administrators, Unique to Government</i>																		
1119-186	MEDICAL-HEALTH OFFICER (gov. serv.)	<u>1</u>	<u>2</u>	<u>2</u>	3	3	4	4	4	4	5	4	L 56	I	6	8	265	457901
1119-190	TOWN CLERK (gov. serv.)	<u>3</u>	<u>2</u>	<u>3</u>	4	4	<u>2</u>	4	4	4	5	5	S 56	I	5	7	265	4590
<i>Other Officials and Administrators Unique to Government</i>																		
1119-210	CONCILIATOR (gov. serv.)	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 56	I	5	8	265	457901
1119-214	ADMINISTRATOR, DENTAL-HEALTH SERVICE (gov. serv.; medical)	<u>2</u>	<u>2</u>	3	4	4	4	4	4	4	5	5	L 4567	I	5	8	265	45901
1119-218	EDUCATIONAL DIRECTOR, PUBLIC- HEALTH NURSING (gov. serv.)	<u>2</u>	<u>2</u>	3	4	4	3	4	4	4	5	5	S 56	I	5	8	265	45901
1119-222	MINISTERIAL ASSISTANT (gov. serv.)	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 567	I	5	7	265	45901
1119-230	HISTORIC-SITES ADMINISTRATOR (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	4	4	4	5	4	L 57	I	5	6	26	5901
1119-234	CROWN-ASSETS DISPOSAL OFFICER (gov. serv.)	<u>2</u>	<u>3</u>	<u>3</u>	4	4	4	4	4	4	5	5	S 57	I	4	7	265	459071
1119-238	PARK SUPERINTENDENT (gov. serv.)	<u>2</u>	<u>3</u>	<u>3</u>	3	3	4	4	4	4	4	5	L 4567	B	4	7	265	45901
1119-242	LABOUR-RELATIONS RETURNING OFFICER (gov. serv.)	<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 56	I	4	6	265	45901
1119-246	RELOCATION COMMISSIONER (gov. serv.)	<u>3</u>	<u>3</u>	4	3	3	4	4	4	4	5	5	S 56	I	4	6	265	4590
1119-250	TRAFFIC-SAFETY ADMINISTRATOR (gov. serv.)	<u>3</u>	<u>3</u>	4	3	3	<u>3</u>	4	4	4	5	5	S 56	I	4	6	265	457901
1119-254	ADVISOR, PUBLIC ASSISTANCE (gov. serv.)	<u>3</u>	<u>3</u>	3	4	4	4	4	4	4	5	5	S 56	I	4	6	265	457901
1119-258	PARK RANGER (gov. serv.)	<u>3</u>	<u>3</u>	4	3	3	4	4	4	4	<u>3</u>	<u>3</u>	L 456	O	3	6	25	5901

GENERAL MANAGERS AND OTHER SENIOR OFFICIALS

WORK PERFORMED

This chapter includes occupations concerned with planning, organizing, directing and controlling the major functions of an industrial, commercial or other establishment, enterprise or organization, on owner's or own behalf. Worker functions include: synthesizing production reports, and data involving economic, social, technical and legal trends, to discover facts and develop management concepts; and consulting with subordinate managers and executives to formulate organizational policies and programs. Work activities include: establishing organization objectives; approving budget allocations; authorizing establishment of major departments and key executive positions; selecting or approving selection of departmental managers and senior staff; delegating authority and approving overall personnel program; directing, motivating and developing skills of executive and managerial personnel to foster productivity, growth and good morale; and co-ordinating activities of various departments or organizational units.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
1130-110	CHIEF EXECUTIVE, EDUCATION (educ.)	6	8	1130-130	GENERAL MANAGER, PRODUCTION (prof. & tech., n.e.c.)	6	8
1130-114	HOSPITAL ADMINISTRATOR (medical)	6	8	1130-134	GENERAL MANAGER, SALES AND ADVERTISING (prof. & tech., n.e.c.)	6	8
1130-118	CHIEF EXECUTIVE, NATURAL SCIENCES AND ENGINEERING (prof. & tech., n.e.c.)	6	8	1130-138	GENERAL MANAGER, SERVICES (prof. & tech., n.e.c.)	6	8
1130-122	GENERAL MANAGER, CONSTRUCTION (construction)	6	8	1130-142	GENERAL MANAGER, TRANSPORT AND COMMUNICATIONS (prof. & tech., n.e.c.)	6	8
1130-126	GENERAL MANAGER, FINANCE (bank. & finance)	6	8				

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>1</u>	<u>2</u>	<u>2</u>	4	4	<u>3</u>	4	4	4	5	5	S 56	I	6	8	265	45971
<u>1</u>	<u>1</u>	<u>1</u>	3	3												

APTITUDES AND CAPACITIES

General Managers and other Senior Officials require:

- learning ability to acquire a knowledge of, and apply various management concepts and practices to plan, organize and direct the overall activities of an enterprise, establishment or organization;
- verbal ability to communicate effectively with persons at all levels, both orally and in writing, when consulting with subordinate

managers and executives, representing organizations in negotiations or sitting on committees;

- numerical ability to analyse economic trends, and prepare or review budget estimates;
- clerical perception to discern pertinent detail in verbal or tabular material, such as reports, financial statements, charts or graphs or correspondence.

TRAINING AND ENTRY REQUIREMENTS

General Managers and other Senior Officials normally require:

- university graduation in the arts, sciences, engineering or education, depending on the occupation; and
- four to five years experience at the middle-management level.

OR

- secondary school graduation; and
- ten or more years of middle-management experience supplemented by part-time studies in the specialty.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement opportunities are very limited for General Managers and other Senior Officials, since they have normally reached the highest plateau within an organization. However, some senior executives could be appointed to a company's board of directors, or to chairman of the board. Other officials may accept senior posts in larger organizations for more remuneration, or head their own firms. Some senior administrators such as 1130-110 CHIEF EXECUTIVE, EDUCATION, 1130-114 HOSPITAL ADMINISTRATOR and 1130-126 GENERAL MANAGER, FINANCE may be appointed to such positions as president, or deputy minister in government. See 1113-110 EXECUTIVE ADMINISTRATOR, GOVERNMENT AGENCIES and 1113-114 EXECUTIVE ADMINISTRATOR, GOVERNMENT DEPARTMENT in Volume I.

Transfer

General Managers and other Senior Officials could transfer to parallel positions in similar establishments or in government. See 1113-118 SENIOR ADMINISTRATOR, GOVERNMENT AGENCIES and 1113-122 SENIOR ADMINISTRATOR, GOVERNMENT DEPARTMENT.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

General Managers and other Senior Officials require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- dealing with people and communicating ideas;
- work resulting in the prestige or the esteem of others.

Temperaments

- the direction, control, and planning of the overall activities of an organization or establishment;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria, for example, determining organization's performance based on a knowledge of management science;
- influencing people in their opinions, attitudes or judgments about ideas or things;
- a variety of duties, often characterized by frequent change.

OTHER REQUIREMENTS

- initiative and drive;
- leadership and organizational ability;
- ability to motivate people and maintain good morale.

OTHER MANAGERS AND ADMINISTRATORS

(except Chapter 1130 General Managers and Other Senior Officials)

WORK PERFORMED

This chapter includes occupations concerned with middle-management activities that are common to governmental, industrial, commercial, educational and other organizations. Worker functions include: coordinating operations of a department, program or unit of an organization to implement policies of senior management; and negotiating matters or exchanging information with other managers, specialists and subordinates to arrive at decisions. Work activities include: formulating plans and organizing resources; appointing subordinate managers, supervisors and other staff; allocating responsibilities; directing administration; and establishing control procedures for operations in fields of natural science, engineering, mathematics, social sciences, education, medicine, health, finance, personnel, industrial relations, sales, advertising, purchasing, services, production, construction, transport and communications, or other areas of the economy.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
<i>Management Occupations: Natural Sciences, Engineering and Mathematics</i>				1133-166	DIRECTOR, SCHOOL OF NURSING (educ.; medical)	5	8
1131-110	MANAGER, ARCHITECTURAL SERVICE (prof. & tech., n.e.c.)	5	8	1133-170	DIRECTOR, SCHOOLS FOR THE DEAF OR BLIND (educ.)	5	8
1131-114	MANAGER, DATA PROCESSING AND SYSTEMS ANALYSIS (prof. & tech., n.e.c.)	5	8	<i>Administrators in Medicine and Health</i>			
1131-118	MANAGER, ENGINEERING (prof. & tech., n.e.c.)	5	8	1134-110	DIRECTOR OF DIETETICS (prof. & tech., n.e.c.)	5	8
1131-122	MANAGER, LIFE SCIENCES PROGRAM (prof. & tech., n.e.c.)	5	8	1134-114	DIRECTOR, OCCUPATIONAL HEALTH (medical)	5	8
1131-126	MANAGER, PHYSICAL SCIENCES PROGRAM (prof. & tech., n.e.c.)	5	8	1134-118	DIRECTOR, NURSING SERVICES (medical)	5	8
1131-130	MANAGER, MATHEMATICAL SERVICES (prof. & tech., n.e.c.)	5	8	1134-122	DIRECTOR, PUBLIC-HEALTH NURSING (medical)	5	8
<i>Management Occupations, Social Sciences and Related Fields</i>				1134-126	DIRECTOR, THERAPEUTIC SERVICES, PSYCHIATRIC HOSPITAL (medical)	5	7
1132-110	DIRECTOR, MUSEUM (educ.)	5	9	1134-130	DIRECTOR, VOLUNTEER SERVICES (medical)	5	7
1132-114	DIRECTOR, LIBRARY (educ.)	5	7	1134-134	DIRECTOR, ADMITTING DEPARTMENT (medical)	4	7
1132-118	DIRECTOR, SOCIAL WORK (social wel.)	5	7	<i>Financial Management Occupations</i>			
<i>Administrators in Teaching and Related Fields</i>				1135-110	COMPTROLLER (prof. & tech., n.e.c.)	5	9
1133-110	ACADEMIC DEAN, UNIVERSITY OR COLLEGE (educ.)	6	8	1135-114	MANAGER, BANK (bank. & finance)	5	9
1133-114	DEAN OF STUDENTS (educ.)	5	8	1135-118	MANAGER, TRUST COMPANY (bank. & finance)	5	9
1133-118	REGISTRAR, COLLEGE OR UNIVERSITY (educ.)	5	8	1135-122	CREDIT MANAGER (prof. & tech., n.e.c.)	5	8
1133-138	SUPERINTENDENT, EDUCATION (educ.)	5	9	1135-126	MANAGER, CREDIT UNION (bank. & finance)	5	8
1133-142	PRINCIPAL (educ.)	5	8				
1133-162	DIRECTOR OF EDUCATION, PENAL INSTITUTIONS (educ.)	5	8				

GED SVP			GED SVP		
<i>Personnel and Industrial Relations Management Occupations</i>			<i>Management Occupations, Transport and Communications Operations</i>		
1136-110	INDUSTRIAL-RELATIONS MANAGER (prof. & tech., n.e.c.)	5 8	1147-110	MANAGER, AIRLINE (air trans.)	5 8
1136-114	PERSONNEL MANAGER (prof. & tech., n.e.c.)	5 8	1147-114	MANAGER, MOTOR TRANSPORT (motor trans.)	5 8
<i>Sales and Advertising Management Occupations</i>			1147-118	MANAGER, RAILWAY (rail trans.)	5 8
1137-110	MANAGER, ADVERTISING (prof. & tech., n.e.c.)	5 8	1147-122	MANAGER, URBAN TRANSIT SYSTEM (motor trans.)	5 8
1137-114	DIRECTOR, PUBLIC RELATIONS (prof. & tech., n.e.c.)	5 8	1147-126	MANAGER, WATER TRANSPORT (water trans.)	5 8
1137-118	MANAGER, SALES (prof. & tech., n.e.c.)	5 8	1147-130	AIRPORT MANAGER (air trans.)	5 7
<i>Purchasing Management Occupations</i>			1147-134	HARBOUR MASTER (water trans.)	5 7
1141-110	MANAGER, MERCHANDISE PURCHASING (ret. trade; whole. trade)	5 7	1147-138	MANAGER, PIPELINES (trans., n.e.c.; utilities, n.e.c.)	5 7
1141-114	MANAGER, PURCHASING (prof. & tech., n.e.c.)	5 7	1147-142	MANAGER, TRANSPORT DEPARTMENT (any ind.)	5 7
<i>Services Management Occupations</i>			1147-162	DISTRICT MANAGER, TELEPHONE COMPANY (telecom.)	5 8
1142-110	HOTEL MANAGER (cater. & lodg.)	5 7	1147-166	MANAGER, RADIO STATION (broadcast., motion pic. & stage)	5 8
1142-114	MANAGER, FOOD AND BEVERAGE (cater. & lodg.)	5 7	1147-170	MANAGER, TELEVISION STATION (broadcast., motion pic. & stage)	5 8
1142-118	DISTRICT MANAGER, PRIVATE INVESTIGATION AND SECURITY SERVICE (bus. serv.)	4 8	1147-174	REGIONAL MANAGER, TELECOMMUNICATIONS SYSTEM (telecom.)	5 8
1142-122	AREA MANAGER, LAUNDRY AND DRY CLEANING (laund., clean. & press.)	4 7	<i>Other Managers and Administrators, n.e.c.</i>		
1142-126	BRANCH MANAGER, JANITORIAL SERVICES (misc. serv.)	4 7	1149-110	MANAGER, NEWSPAPER (print. & pub.)	5 9
<i>Production Management Occupations</i>			1149-114	MANAGER, SCIENTIFIC, TECHNICAL AND OTHER PERIODICAL PUBLICATIONS (print. & pub.)	5 9
1143-110	MANAGER, FOOD AND BEVERAGE PRODUCTION (prof. & tech., n.e.c.)	5 8	1149-118	DIRECTOR, ZOO (prof. & tech., n.e.c.)	5 8
1143-114	MANAGER, INDUSTRIAL AND MANUFACTURING PRODUCTION (prof. & tech., n.e.c.)	5 8	1149-126	MANAGER, ADMINISTRATION (prof. & tech., n.e.c.)	5 8
1143-118	MANAGER, RAW-MATERIALS PRODUCTION (prof. & tech., n.e.c.)	5 8	1149-130	MANAGER, ASSOCIATION (prof. & tech., n.e.c.)	5 8
<i>Management Occupations, Construction Operations</i>			1149-134	MANAGER, METHODS AND PROCEDURES (prof. & tech., n.e.c.)	5 8
1145-110	CONSTRUCTION MANAGER (construction)	5 8	1149-138	MANAGER, PUBLIC UTILITIES (elec. power; utilities, n.e.c.; water works)	5 8
1145-114	CONSTRUCTION SUPERINTENDENT (construction)	5 8	1149-142	MANAGER, REAL ESTATE (insur. & real estate)	5 8
			1149-146	MANAGER, WAREHOUSE (storage, n.e.c.)	5 7
			1149-150	MANAGER, BUILDINGS, VEHICLES AND SUPPLIES (any ind.)	4 9
			1149-154	DIRECTOR, HORSE RACING (amuse. & rec.)	4 6

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
2	2	2	4	4	3	4	4	4	5	5		S 567	I	6-4	9-6	265	457901
1	1	3	3	3						4							

APTITUDES AND CAPACITIES

Managers require:

- learning ability to understand administrative concepts and practices, and to acquire the particular knowledge necessary to successfully conduct activities within a specialized organizational unit;
- verbal ability to deal effectively with people, and to communicate

- clearly with persons of different backgrounds and levels of comprehension;
- numerical ability to estimate financial, personnel and materiel requirements, and to review activities to ensure efficient use of resources;
- clerical perception to discern significant items in verbal or numerical material, and to detect errors in correspondence or reports.

TRAINING AND ENTRY REQUIREMENTS

Managers generally require either:

- graduation from a university program, preferably with a post-graduate degree, for occupations in architecture, engineering, life sciences, physical sciences, social sciences, education, and medicine and health;
- for most of these occupations, licensing or certification in accordance with provincial legislation; and

- ten years of experience in previous junior managerial or supervisory situations;
- OR**
- secondary school graduation; and
 - ten years of experience, supplemented by part-time or full-time courses in the specialty, for example, hotel management, real estate or warehousing management.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Managers who have the necessary qualifications may advance to appropriate occupations in Chapter 1130, GENERAL MANAGERS AND OTHER SENIOR OFFICIALS. They may also advance to managerial positions in other establishments requiring similar background and involving more responsibility and increased remuneration.

Transfer

Managers may transfer to other occupations in this chapter, or to similar occupations in other chapters, provided they have the necessary education, training and experience, for example, 1141-114 MANAGER, PURCHASING may find a position as 1179-190 CONTRACTS ADMINISTRATOR or 1119-234 CROWN-ASSETS DISPOSAL OFFICER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry into middle management occupations require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- work resulting in prestige or the esteem of others, as happens to a leader of a successful business enterprise;
- dealing with people and communicating ideas.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people beyond giving and receiving instructions;
- influencing people in their opinions, attitudes, or judgments about ideas or things;
- the evaluation of information against sensory or judgmental criteria, for example deciding between applicants when hiring staff;
- the evaluation of information against measurable or verifiable criteria, for example, in educational field, recommending location and size of schools based on potential enrolment statistics;
- a variety of duties often characterized by frequent change.

OTHER REQUIREMENTS

- leadership ability, initiative and interest in management;
- ability to motivate employees and establish rapport with people;
- organizational ability to plan programs, and to have flexibility and perseverance toward their completion;
- ability to analyze complex problems and to use sound judgment in making significant decisions;
- ability to consistently interpret and react appropriately to directives of higher management.

ACCOUNTANTS, AUDITORS AND OTHER FINANCIAL OFFICERS

WORK PERFORMED

This chapter includes occupations concerned with planning and administering accounting services, advising on accountancy problems, and planning and conducting audits of accounts. Worker functions include: coordinating accounting services, audit activities, or other financial services; analyzing statistical data, rate structures, budgets, applications for credit, or other financial data; negotiating purchase and sale of securities or changes in rate structures; supervising activities of accounting, auditing and clerical staff; and advising on foreign banking arrangements, trust funds, underwriting policies, financial systems and procedures, and other financial matters. Work activities include: applying the principles of accounting, cost analysis and statistical analysis to solve accountancy problems; and auditing, preparing, certifying, examining, reporting and maintaining financial accounts, reports and systems.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
1171-110	SUPERVISOR, ACCOUNTANTS (bank. & finance)	5	9	1171-158	SUPERVISOR, AUDITORS (bank. & finance)	5	8
				1171-138	BRANCH ACCOUNTANT, BANK (bank. & finance)	4	7

B

		GED	SVP			GED	SVP
1171-114	ACCOUNTANT (prof. & tech., n.e.c.)	5	8	- 1171-126	ACCOUNTANT, MACHINE PROCESSING (prof. & tech., n.e.c.)	5	8
1171-118	ACCOUNTANT, BUDGET (prof. & tech., n.e.c.)	5	8	1171-130	ACCOUNTANT, PROPERTY (prof. & tech., n.e.c.)	5	8
1171-122	ACCOUNTANT, COST (prof. & tech., n.e.c.)	5	8	1171-134	ACCOUNTANT, TAX (prof. & tech., n.e.c.)	5	8
				1171-162	AUDITOR (prof. & tech., n.e.c.)	5	8

C

		GED	SVP			GED	SVP
1171-182	SECURITIES COUNSELLOR (bank. & finance)	5	8	1171-198	PASSENGER AND FREIGHT RATES ANALYST (prof. & tech., n.e.c.)	5	7
1171-184	INVESTMENT ANALYST (bank. & finance)	5	8	1171-200	STUDENT AWARDS OFFICER (educ.)	5	7
1171-186	BURSAR (educ.)	5	7	1171-202	ENGINEERING-DEPRECIATION EVALUATOR (prof. & tech., n.e.c.)	5	7
1171-188	FOREIGN BANKING ARRANGEMENTS OFFICER (bank. & finance)	5	7	1171-206	FOREIGN EXCHANGE TRADER (bank. & finance)	4	7
1171-190	TRUST OFFICER (bank. & finance)	5	7	1171-210	CREDIT OFFICER (bank. & finance)	4	6
1171-194	HEAD OFFICE UNDERWRITER (insur. & real estate)	5	7				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>1</u> <u>2</u>	<u>2</u>	<u>1</u> <u>2</u>	4	4	<u>2</u>	4	4	4	5	5 4	S 567	I	5-4	9-7	71	0Y9457
B	<u>2</u>	<u>2</u>	<u>1</u> <u>2</u>	4	3 4	<u>2</u>	4	3	4	5	5	S 567	I	5	8	71	90Y457
C	<u>2</u>	<u>2</u>	<u>2</u>	4	4 3	<u>2</u> <u>3</u>	4	3	4	5	5	S 567	I	5-4	8-6	712	09457Y

APTITUDES AND CAPACITIES

Financial Officers require:

- learning ability to understand and apply the principles and practices of accounting, auditing, statistics, fiscal management, and related systems and procedures;
- verbal ability to correctly interpret the wishes of clientele and to clearly explain financial procedures, and to advise staff and clientele on related transactions;

- numerical ability to make mathematical calculations with speed and accuracy;
- clerical ability to observe differences in documents such as ledgers and inventories, to proofread numbers, and to avoid perceptual errors in mathematical tabulations and calculations;
- near visual acuity for close up work such as reading or examining fiscal statements.

TRAINING AND ENTRY REQUIREMENTS

Financial Officers normally require:

A and B

- secondary school graduation at the university entrance level;
- a four year university program leading to a bachelor's degree in commerce or in a related field; and
- up to three years of on-the-job experience.

OR

- secondary school graduation at the university entrance level; and
- a number of years of on-the-job experience, of which four or five years are devoted to planned courses of study at home.

In both cases the passing of periodic and final examinations leading to membership in a provincial accounting association is required. In some provinces, provincial statutes require those engaged in public accounting hold a provincial license.

C

- high school graduation on the university entrance level; and
- one to five years experience in related work.

In some cases a program of full-time or part-time university study, leading to a bachelor's degree in arts, commerce or business administration is desirable.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Financial Officers in Cluster A, with the necessary experience, may advance to senior management positions within the organization in which they are employed. Financial Officers in Cluster B, who display leadership, may advance to related supervisory occupations in Cluster A. Financial Officers in Clusters B and C, who evidence managerial skills, may advance to occupations in Chapter 113/114 under Financial Management Occupations.

Transfer

Transfer possibilities are to similar positions in other types of business organizations, such as trade, commerce, industry, government service, public utilities and non-profit institutions.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Financial Officers require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- dealing with things and objects.

Additionally, for Cluster C:

- business contact with people.

Temperaments

- the evaluation of information, against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria;
- the precise attainment of set limits, tolerances or standards;
- responsibility for the direction, planning and control of an entire financial activity or the activities of other financial workers;
- dealing with people in actual job duties beyond giving and receiving instructions;
- influencing people in their opinions, attitudes or judgments about ideas or things.

ORGANIZATION AND METHODS ANALYSTS

WORK PERFORMED

This chapter includes occupations concerned with reviewing, analyzing and improving business and organizational systems to assist management to operate with greater efficiency and effectiveness. Worker functions include: analyzing objectives of organization, delegation and exercise of authority, job descriptions, work methods, records, reports and manuals to identify problems and recommend solutions; and interviewing staff and consulting with managers and supervisors to collect and validate data during study. Work activities include: conducting organizational studies and evaluations; designing systems and procedures for new work processes; conducting work simplification and measurement studies; maintaining a forms and records management program; and preparing and maintaining systems and procedures manuals.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
1173-110	SUPERVISOR, ORGANIZATION AND METHODS ANALYSTS (prof. & tech., n.e.c.)	5	8	1173-122	ORGANIZATIONAL ANALYST (prof. & tech., n.e.c.)	5	7
1173-114	METHODS AND PROCEDURES ANALYST (prof. & tech., n.e.c.)	5	7	1173-126	RECORD-SYSTEMS ANALYST (prof. & tech., n.e.c.)	4	6
1173-118	FORMS ANALYST-AND-DESIGNER (prof. & tech., n.e.c.)	4	6	1173-130	WORK-STUDY ANALYST (prof. & tech., n.e.c.)	4	6

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	3	<u>3</u>	3	<u>3</u>	4	4	4	5	4	L 567	I	5-4	8-6	762		905174
			<u>2</u>	<u>2</u>	<u>2</u>	3	3	3									9051

APTITUDES AND CAPACITIES

Organization and Methods Analysts require:

- learning ability to understand and apply the basic principles of business organization, methods and procedures, to analyze and develop an efficient forms and reporting system, and possess an inquisitive and fertile mind with a penchant for detail;
- verbal ability to communicate effectively both orally or in writing with people of various levels of training and experience;
- spatial perception to visualize and chart organizational structures,

work-flow processes, and to design and determine content and arrangement of business and other forms;

- form perception for 1173-118 FORMS ANALYST-AND-DESIGNER to see slight differences in widths and lengths of lines when draughting forms and to analyze the style and size of print used;
- clerical perception to note pertinent detail in written material to avoid errors in organizational charts, instructions, forms and reports;
- near visual acuity, depth perception and colour discrimination.

TRAINING AND ENTRY REQUIREMENTS

Organization and Methods Analysts require:

- secondary school graduation; and
- two to four years on-the-job training supplemented by company-sponsored courses of study and seminars, or extension courses offered by institutes of technology or community colleges or universities;

OR

- graduation from an institute of technology or community college in business administration; and
- two to four years on-the-job training or related experience;

OR

- a bachelor's degree in commerce and finance from a recognized university; and
- one to two years on-the-job training or related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Organization and Methods Analysts with experience and managerial potential may advance to 1149-134 MANAGER, METHODS AND PROCEDURES or to 1173-110 SUPERVISOR, ORGANIZATION AND METHODS ANALYSTS.

Transfer

Transfers may be to other occupations within this chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Organization and Methods Analysts require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- dealing with people and the communication of ideas;
- business contact with people.

Temperaments

- evaluation of information against sensory or judgmental criteria by collecting, organizing and interpreting data obtained from observing work methods and systems;
- evaluation of information against measurable or verifiable criteria;
- dealing with people in actual job duties beyond giving and receiving instructions;
- a variety of duties often characterized by frequent change;
- influencing people in their opinions, attitudes or judgments about ideas or things;
- the direction, control and planning of an entire activity or the activities of others when employed as 1173-110 SUPERVISOR, ORGANIZATION AND METHODS ANALYSTS.

PERSONNEL AND RELATED OFFICERS

WORK PERFORMED

This chapter includes occupations concerned with implementing policies as directed by management, primarily related to personnel administration and labour relations. Worker functions include: co-ordinating personnel administrative services, manpower and student employment and counselling services, and scholarship, grant and loan programs; analyzing and synthesizing job and occupational information for purposes, such as classification, salary determination, career information, and manpower research and planning; interviewing and counselling employees and job seekers to determine their suitability for employment, promotion, or training programs. Work activities include: representing management or labour in collective-bargaining procedures; participating in programs related to welfare, safety, and compensation of employees; preparing job analyses to provide occupational data; determining job seekers' suitability for employment, vocational training, rehabilitation programs and related manpower services.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
1174-110	LABOUR-RELATIONS SPECIALIST (prof. & tech., n.e.c.)	5	8	1174-122	OCCUPATIONAL ANALYST (prof. & tech., n.e.c.)	5	7
1174-114	EMPLOYMENT SUPERVISOR (prof. & tech., n.e.c.)	5	8	1174-126	FINANCIAL-AIDS OFFICER (educ.)	5	7
1174-118	PERSONNEL OFFICER (prof. & tech., n.e.c.)	5	7	1174-130	MANPOWER COUNSELLOR (gov. serv.)	5	6
				1174-134	EMPLOYMENT INTERVIEWER (prof. & tech., n.e.c.)	5	6

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 56	I	5	8-6	265	590741
<u>3</u>	<u>3</u>	<u>2</u>			<u>2</u>											

APTITUDES AND CAPACITIES

Personnel and Related Officers require:

- learning ability to understand and apply the principles of personnel administration in such fields as employment, counselling, occupational and salary analysis, labour relations and student financial-aid programs;
- verbal ability to communicate effectively with people at all levels of

education and training and from a wide variety of occupational backgrounds, and to present information lucidly, both orally and in writing;

- numerical ability to prepare financial and material estimates and reports;
- clerical perception to review reports, collective-bargaining agreements, contracts, personnel records and other written material.

TRAINING AND ENTRY REQUIREMENTS

Personnel and Related Officers usually require:

- a bachelor's degree with a major in psychology, sociology or business administration;

- a minimum of two years on-the-job experience; and
- completion of specialized courses provided by universities, community colleges or employers in personnel administration, labour relations, or job and occupational analysis.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for individuals with sufficient experience and managerial potential may be to 1136-110 INDUSTRIAL-RELATIONS MANAGER or 1136-114 PERSONNEL MANAGER, while others with leadership qualities and supervisory potential may advance to the supervisory occupations in this chapter.

Transfer

Transfers may occur to other occupations in this chapter. Those who have a bachelor's degree in the social sciences or business administration may transfer to occupations in psychology, sociology or business administration, and those with appropriate qualifications and certification may transfer to occupations in teaching, occupational guidance or counselling.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Personnel and Related Officers require significant interests in, and dispositions for work involving the following:

Interests

- activities involving business contact with people;
- activities concerned with people and communication of ideas;
- activities resulting in prestige or esteem of others by acting as an arbiter in labour-management disputes, or as a counsellor assisting job seekers or employees to solve their problems.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria by resolving staff problems, such as employee performance, absenteeism and grievances by interviewing employees and supervisors and recommending or initiating remedial action based on experience or precedent;
- the evaluation of information against measurable or verifiable criteria;
- influencing people in their opinions, attitudes or judgments about ideas or things;
- the direction, control and planning of an entire activity or the activities of others;
- a variety of duties often characterized by frequent change.

OTHER CLUES

- tact, discretion, integrity with others, and the ability to establish rapport.

PURCHASING OFFICERS AND BUYERS, EXCEPT WHOLESALE AND RETAIL TRADE

WORK PERFORMED

This chapter includes occupations concerned with buying goods and services for internal use or for further processing in governmental, industrial, business or other establishments. Worker functions include: coordinating the purchase of goods or services of the correct type, quantity and quality, and their delivery according to schedule; and negotiating prices, specification requirements, and other contractual details with suppliers. Work activities include: establishing organization's requirements; studying catalogues, trade periodicals and current market data on availability, variety and prices of goods and services; developing and interpreting specifications; inviting tenders; interviewing suppliers and establishing delivery schedules.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
1175-110	PURCHASING OFFICER, BUSINESS SERVICES (bus. serv.)	5	7	1175-114	PURCHASING OFFICER, FOOD AND RELATED PRODUCTS (whole. trade)	5	7
				1175-118	PURCHASING OFFICER, MATERIAL (whole. trade)	5	7

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>3</u>	3	4	<u>3</u>	4	4	4	5	<u>3</u>		S 567	I-B	5	7	26	5790
			4							5							

APTITUDES AND CAPACITIES

Purchasing Officers and Buyers require:

- learning ability to acquire and apply a knowledge of the principles and techniques involved in purchasing;
- verbal ability to understand purchasing and sales terminology, and communicate effectively and persuasively with suppliers when negotiating for goods and services;
- numerical ability to calculate prices, credits, discounts and quantities, and to purchase goods and services within budgetary limitations;

- clerical perception to keep records of purchases, prepare and review contracts and requisitions, analyse budgets, and examine market information for product specifications;
- ability to recognize similarities or differences in colours of the materials purchased, for 1175-114 PURCHASING OFFICER, FOOD AND RELATED PRODUCTS;
- near-visual acuity when examining specifications, policies agreements and orders.

TRAINING AND ENTRY REQUIREMENTS

Purchasing Officers and Buyers normally require:

- high school graduation; and
- two to four years experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for those with sufficient knowledge and experience may be from assistant buyer to buyer, to assistant purchasing officer to purchasing officer. Individuals with broad purchasing experience and with managerial potential may advance to occupations 1141-110 MANAGER, MERCHANDISE PURCHASING or 1141-114 MANAGER, PURCHASING.

Transfer

Workers with suitable qualification may transfer to sales, general plant administration, accounting, auditing, warehousing, traffic and to product and market research.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Purchasing Officers and Buyers require significant interests in, and dispositions for work involving the following:

Interests

- activities involving business contact with people;
- dealing with people and the communication of ideas;

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- influencing people in their opinions, attitudes or judgments about ideas or things;
- the evaluation of information against sensory or judgmental criteria;
- the evaluation of information against measurable or verifiable criteria.

INSPECTORS AND REGULATORY OFFICERS, NON-GOVERNMENT

This group includes occupations concerned with enforcing adherence to regulations, policies or procedures, and advising on standards in organizations or agencies, other than in municipal, provincial or federal governments.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS												
		Aptitudes											PA	EC
		G	V	N	S	P	Q	K	F	M	E	C	GED	SVP
1176-110	SAFETY INSPECTOR (any ind.)	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	4	4	4	4	4	4	L 24567	I 567
1176-114	INSURANCE INSPECTOR, LOSS- PREVENTION (insur. & real estate)	<u>3</u>	<u>3</u>	3	3	<u>3</u>	3	4	4	4	5	4	L 4567	B
7516-114T	LOGGING-OPERATIONS INSPECTOR (forest. & log.)	<u>3</u>	<u>3</u>	4	4	4	4	4	4	4	4	5	L 2	O
1176-122	SAFETY CO-ORDINATOR (motor trans.)	<u>3</u>	<u>3</u>	4	3	<u>3</u>	4	4	4	4	5	5	L 456	I
1176-126	TRAFFIC INSPECTOR (motor trans.; rail trans.)	<u>3</u>	<u>3</u>	4	<u>3</u>	4	4	4	4	4	<u>3</u>	4	L 456	O
1176-130	RADIATION-CONTAMINATION MONITOR (prof. & tech., n.e.c.)	<u>3</u>	<u>3</u>	3	4	<u>3</u>	4	4	4	4	5	5	L 4567	I 67
1176-134	SERVICE-STATION INSPECTOR (whole. trade)	<u>3</u>	<u>3</u>	<u>3</u>	4	3	4	4	4	4	5	5	L 56	B
1176-138	ACREAGE-QUOTA-ASSIGNMENT OFFICER (whole. trade)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	4	4	4	4	5	5	S 36	I
1176-142	DINING-SERVICE INSPECTOR (rail trans.)	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	4	5	5	L 567	I 5
1176-146	INSPECTOR, TRAVEL ACCOMMODATION (cater. & lodg.)	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	4	5	5	L 56	I
1176-150	GAS-CUSTOMER-LIAISON MAN (utilities, n.e.c.)	<u>3</u>	<u>3</u>	<u>3</u>	4	3	3	4	4	4	5	5	L 56	I
1176-154	AMMUNITION-SAFETY INSPECTOR (explosives)	<u>3</u>	3	4	4	<u>3</u>	4	4	4	4	5	5	L 34	B 56
1176-158	INSPECTOR, TRANSPORTATION SERVICES (any ind.)	<u>3</u>	3	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S	I
1176-162	FIRE-SAFETY INSPECTOR (any ind.)	<u>3</u>	<u>3</u>	4	3	<u>3</u>	4	4	4	4	5	5	L 234567	B 6
1176-166	INSPECTOR, HUMANE SOCIETY (misc. serv.)	<u>3</u>	<u>3</u>	4	4	<u>4</u>	4	4	4	4	5	5	M 456	B

GROUP 1179

OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION, N.E.C.

This group includes occupations, not elsewhere classified, concerned with carrying out activities directly related to management and administration in government, industry and other organizations.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Business Agents</i>																		
1179-110	EXECUTIVE SECRETARY, ASSOCIATION (misc. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 56	I	5	6	265	4590
1179-114	BUSINESS AGENT, LABOUR UNION (misc. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 56	I	4	6	265	45790
1179-118	AGENT (amuse. & rec.; broadcast., motion pic. & stage)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	3	4	4	4	5	5	S 56	I	4	6	265	45790
<i>Promotional Agents</i>																		
1179-138	CAMPAIGN CONSULTANT (bus. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 56	I	5	7	265	45901
1179-142	CO-ORDINATOR, TOURISM (amuse. & rec.; gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	4	S 56	I	5	7	265	457901
1179-146	PUBLIC-RELATIONS MAN (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>3</u>	3	3	3	4	4	4	5	5	S 567	I	5	7	265	457901
1179-150	INDUSTRIAL-DEVELOPMENT REPRESENTATIVE (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>2</u>	3	3	3	4	4	4	5	4	S 56	I	5	7	265	457901
1179-154	SALES-PROMOTION ADMINISTRATOR (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	4	4	4	4	5	5	S 4567	I	5	7	265	457901
1179-158	TECHNICAL-SERVICE CONSULTANT (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	4	4	4	4	5	4	S 56	I	5	7	265	5901
<i>Other Administrators and Consultants, n.e.c.</i>																		
1179-178	CORPORATE SECRETARY (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 56	I	5	8	265	45901
1179-182	ADMINISTRATIVE OFFICER (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>2</u>	3	3	<u>3</u>	4	4	4	4	5	S 56	I	5	7	265	457901
1179-186	CORPORATE PLANNER (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 456	I	5	7	265	45901
1179-190	CONTRACTS ADMINISTRATOR (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>2</u>	3	3	<u>4</u>	4	4	4	5	5	S 56	I	5	7	265	457901
1179-194	STATIONS-RELATIONS ADMINISTRATOR (broadcast., motion pic. & stage)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>4</u>	4	4	4	5	5	S 56	I	5	6	265	457901
1179-198	PROPERTY ADMINISTRATOR (gov. serv.; insur. & real estate)	<u>2</u>	<u>2</u>	<u>2</u>	4	4	<u>3</u>	4	4	4	5	5	S 56	I	5	6	265	45901
1179-202	FREIGHT-TRAFFIC CONSULTANT (bus. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 456	I	5	6	265	5091
1179-206	BAND ADMINISTRATOR (prof. & tech., n.e.c.)	<u>2</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 56	I	4	6	265	45901

CHEMISTS

WORK PERFORMED

This chapter includes occupations concerned with conducting basic and applied research to extend the knowledge of chemistry, and to develop new or improved compounds, materials or substances. Worker functions include: interpreting and synthesizing data collected from research and experimentation; supervising and co-ordinating the activities of technologists and technicians; and skilfully using technical equipment and other work aids to conduct qualitative and quantitative analyses and experiments. Work activities include: developing analytical methodology and techniques; conducting experiments in organic, inorganic and physical chemistry; synthesizing compounds and products; analyzing finished products; and preparing laboratory and technical reports.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2111-110	AGRICULTURAL CHEMIST (prof. & tech., n.e.c.)	6	8	2111-122	INORGANIC CHEMIST (prof. & tech., n.e.c.)	6	8
2111-114	ANALYTICAL CHEMIST (prof. & tech., n.e.c.)	6	8	2111-126	ORGANIC CHEMIST (prof. & tech., n.e.c.)	6	8
2111-118	CHEMICAL OCEANOGRAPHER (prof. & tech., n.e.c.)	6	8	2111-130	PHYSICAL CHEMIST (prof. & tech., n.e.c.)	6	8
				2111-134	QUALITY-CONTROL CHEMIST (prof. & tech., n.e.c.)	6	8

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	3	3	3	5	<u>3</u>	L 47	I 6	6	8	781	0Y914	
		<u>1</u>	<u>1</u>	<u>1</u>						<u>2</u>							

APTITUDES AND CAPACITIES

Chemists require:

- learning ability to understand and apply scientific theories and data, conduct laboratory experiments, comprehend the principles underlying chemical properties and chemical change, and work with theoretical concepts.
- verbal ability to understand the meaning of words and ideas associated with them, comprehend scientific terminology of chemistry, and understand the language of textbooks, professional magazines and papers;
- numerical ability to use advanced mathematics quickly and accurately, derive formulae for solving unknown variables, and simultaneously determine relationships of several variables;
- spatial perception to visualize chemical reactions and changes in properties, and to think visually of geometric forms as applicable to molecular patterns in solids, liquids, and gases;
- form perception to observe pertinent detail in objects and make visual comparisons and discriminations during analytical studies of

physical and chemical properties of organic and inorganic substances;

- clerical perception to see pertinent detail in verbal or tabular material, to observe differences in copy, and to avoid errors in mathematical computations;
- colour discrimination to recognize similarities or differences in colour, shades or other colour values of chemical substances and accurately identify and match colours;
- capacity to handle, finger and feel objects, materials and scientific instruments, and adjust or calibrate scientific instruments;
- visual acuity to discern details when using high-powered microscopes or simple magnification devices;
- adaptability to extremes of temperatures, and to wet or humid conditions, important for 2111-118 CHEMICAL OCEANOGRAPHER, when conducting studies in marine environment;
- adaptability to hazardous conditions, such as those that may cause burns or poisoning from toxic chemicals and substances.

TRAINING AND ENTRY REQUIREMENTS

Chemists normally require a bachelor's degree with specialization in some branch of chemistry.

A minimum of a master's degree is usually expected for a position in applied research in industry or for a teaching position in a university.

A Ph.D. is generally required for a position in basic research. Professional chemists in the Province of Quebec must be registered and must

comply with the provisions of the Professional Chemists' Act. In some provinces, agricultural chemists must be registered professional agrologists.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Chemists with managerial ability may advance to 1131-126 MANAGER, PHYSICAL SCIENCES PROGRAM which requires considerable experience in planning, organizing, directing and controlling personnel primarily concerned with research and quality control activities.

Transfer

Normally, Chemists do not transfer to work associated with other disciplines; however, they may transfer to other specialties within chemistry provided they have acquired the additional training requirements.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Chemists require significant interests in, and dispositions for work involving the following:

Interests

- scientific and technical activities, such as determining the relationship between molecular structures and the chemical and physical properties of organic and inorganic compounds, and developing techniques for the use of different types of technical instruments;
- abstract and creative work, such as performing experiments to test theories, and investigating organic chemical phenomena to develop, study, synthesize or modify carbon compounds;
- dealing with things and objects, for example, developing techniques for use of different types of instruments, such as spectrometers, electron microscopes and fluoroscopes.

Temperaments

- the evaluation of information, using measurable or verifiable criteria as in examining and testing chemicals to determine their properties and analyzing metals and ores to determine their composition;
- the precise attainment of set limits or standards indicated by performing assays and tests to determine identity, purity and exact strengths of chemicals and chemical compounds;
- the evaluation of information using sensory or judgmental criteria, as in carrying out appropriate sampling techniques on raw materials or finished products, and interpreting, preparing, and presenting reports on test results to appropriate managerial or control authorities;
- a variety of duties often characterized by frequent change, such as performing tests, conducting experiments, designing equipment and preparing reports;
- the direction, control and planning of an entire activity or the activities of others, such as devising, installing and supervising the construction and operation of a pilot-plant, and supervising and coordinating the work of technologists and technicians in various phases of chemical experimentation.

GEOLOGISTS AND RELATED SCIENTISTS

WORK PERFORMED

This chapter includes occupations concerned with conducting research into the nature and history of the earth's crust, the physical nature of the atmosphere and hydrosphere, the distribution, circulation and properties of water, and the stratigraphic arrangement of the earth. Worker functions include: analyzing and synthesizing data to discover facts; compiling and interpreting research data; and skilfully using technical equipment and work aids, such as seismographs, gravimeters, magnetometers and electrical-resistivity apparatus to make precise measurements and plot geological observations. Work activities include: identifying and classifying fossils and precious stones; locating and advising on the development and extraction of oil, natural gas and mineral deposits; and conducting surveys to measure seismic, gravitational and magnetic forces affecting the earth.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2112-110	EXPLORATION GEOPHYSICIST (prof. & tech., n.e.c.)	6	8	2112-126	MINERALOGIST (prof. & tech., n.e.c.)	6	8
2112-114	GEOLOGIST (prof. & tech., n.e.c.)	6	8	2112-130	PALEONTOLOGIST (prof. & tech., n.e.c.)	6	8
2112-118	GEOPHYSICIST (prof. & tech., n.e.c.)	6	8	2112-134	PETROLEUM GEOLOGIST (prof. & tech., n.e.c.)	6	8
2112-122	HYDROLOGIST (prof. & tech., n.e.c.)	6	8	2112-138	SEISMOLOGIST (prof. & tech., n.e.c.)	6	8

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>2</u>	3	3	3	3	4	<u>3</u>	L 23467	B 26	6	8	781	09Y41	
		<u>2</u>	<u>1</u>					4		<u>4</u>							

APTITUDES AND CAPACITIES

Geologists and Related Scientists require:

- learning ability and intellectual capacity to understand and apply the principles of geology, a high degree of reasoning ability, a penchant for detail, and an inquisitive and imaginative mind;
- verbal ability to understand the meaning of scientific terminology and ideas associated with them, and to communicate clearly, orally or in writing;
- numerical ability to perform advanced-mathematical calculations quickly and accurately in areas, such as plotting, mapping and interpreting seismographic recordings;
- spatial perception to visualize land contours, and identify rock formations and seam and fault alignments from observations, or from data such as stereoscopic-aerial photographs;
- form perception to make visual comparisons, using microscopes and other technical instruments to determine shape, surface markings and other physical characteristics of rocks and rock formations, and to examine specimens and determine geological age;
- colour discrimination to recognize similarities or differences in colour, or in shades or other values of same colour when examining rock specimens or core samples;
- capacity to climb over uneven rock surfaces and maintain balance while walking, standing or running on slippery, narrow, or steep surfaces;
- capacity to stoop, crawl or kneel during field trips to examine and collect geological specimens;
- capacity to extend arms, handle, finger or feel objects, when judging size, shape and texture, and to adjust scientific instruments and laboratory equipment;
- good hearing to detect changes in tone on measuring instruments which emit sound signals;
- visual acuity, both near and far, depth perception to judge distances, and a good field of vision for observing objects outdoors, examining stereoscopic aerial photographs, and adjusting lenses to bring objects into focus;
- capacity to withstand extremes of temperature changes that cause bodily discomfort;
- capacity to adjust to situations in which there is a risk of bodily injury.

TRAINING AND ENTRY REQUIREMENTS

Geologists and Related Scientists normally require:

- a bachelor of science or geology degree, supplemented by on-the-job experience extending over two or more years;
- a master's degree, usually, for a position in applied research in a governmental or industrial research setting, or for a laboratory teaching position in a university or community college;
- a Ph.D. for more-advanced positions in basic research.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

After considerable experience, advancement may be to 1131-126 MANAGER, PHYSICAL SCIENCES PROGRAM.

Transfer

Geologists and Related Scientists may transfer to specialties within this chapter provided they have taken additional training.

Transfers may be to some occupations in civil engineering, such as 2143-150 SOIL ENGINEER or to other engineering occupations such as 2159-134 GEOLOGICAL ENGINEER provided they meet the necessary requirements of the Professional Engineers' Act.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Geologists and Related Scientists require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- activities of an abstract or creative nature;
- dealing with things and objects, such as scientific instruments and other technical equipment.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as interpreting reflected or refracted readings on electronic recording devices to identify various types of rock strata;
- the evaluation of information against sensory or judgmental criteria;
- the precise attainment of set limits, tolerances or standards;
- the direction, control and planning of an entire activity or the activities of others;
- a variety of duties often characterized by frequent change.

PHYSICISTS

WORK PERFORMED

This chapter includes occupations concerned with conducting research to expand the knowledge of the science of physics and to further the scientific and commercial utilization of heat, light, acoustics, electricity and magnetism, atoms, molecules and nuclei and other physical phenomena. Worker functions include: synthesizing research data to formulate or substantiate new theories, concepts or laws; analyzing and evaluating results of experiments to determine their validity or application; supervising the work of technologists, technicians and other support staff; making precise measurements by skilfully using scientific equipment and other work aids to achieve desired standards. Work activities include: conducting experiments to discover the fundamental particles of matter; observing the forms of energy and their interaction and effect on matter; recording and reporting the results of experiments; preparing scientific papers; predicting results of experiments and applying these results to a scientific or commercially viable product or process.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2113-110	ACOUSTICS PHYSICIST (prof. & tech., n.e.c.)	6	8	2113-138	MECHANICS PHYSICIST (prof. & tech., n.e.c.)	6	8
2113-114	ASTRONOMER (prof. & tech., n.e.c.)	6	8	2113-142	NUCLEAR PHYSICIST (prof. & tech., n.e.c.)	6	8
2113-118	ATOMIC AND MOLECULAR PHYSICIST (prof. & tech., n.e.c.)	6	8	2113-146	OPTICS PHYSICIST (prof. & tech., n.e.c.)	6	8
2113-122	ELECTRICITY AND MAGNETISM PHYSICIST (prof. & tech., n.e.c.)	6	8	2113-150	PHYSICAL OCEANOGRAPHER (prof. & tech., n.e.c.)	6	8
2113-126	ELEMENTARY-PARTICLE PHYSICIST (prof. & tech., n.e.c.)	6	8	2113-154	PLASMA PHYSICIST (prof. & tech., n.e.c.)	6	8
2113-130	FLUIDS PHYSICIST (prof. & tech., n.e.c.)	6	8	2113-158	SOLID-STATE PHYSICIST (prof. & tech., n.e.c.)	6	8
2113-134	HEALTH PHYSICIST (prof. & tech., n.e.c.)	6	8	2113-162	THERMAL PHYSICIST (prof. & tech., n.e.c.)	6	8

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
1	1	1	1	1	3	3	3	3	5	4	L 567	I-B	6	8	7801	0Y941
									3							

APTITUDES AND CAPACITIES

Physicists require:

- learning ability to comprehend the basic properties of matter and laws governing the behaviour of energy in all its forms, the relationship between energy and matter, and theoretical concepts, and intellectual capacity to acquire the necessary academic background and make reasoned judgments;
- verbal ability to understand the meanings and use of words, scientific terminology and ideas associated with them, and to communicate clearly in writing or orally;
- numerical ability to apply advanced mathematical techniques and carry out precise measurements to formulate mathematical relationships of physical phenomena;
- spatial perception to visualize geometric forms, comprehend the abstract relationships of geometry and logic, and discover mathematical regularities in things, such as nuclei and atoms, solids, liquids and gases;
- form perception to make visual comparisons and to observe slight differences in shapes and arrangements;
- capacity to hear and make fine discriminations in sound, especially in the study of acoustics;
- visual acuity, both near and far, depth perception and colour discrimination;
- capacity to work indoors in controlled environmental conditions, or

CHAPTER 2113

outside in wet or humid conditions when employed as 2113-150
PHYSICAL OCEANOGRAPHER.

TRAINING AND ENTRY REQUIREMENTS

Physicists normally require:

- a bachelor's degree in science; and
- up to two years of on-the-job training;
- a master's degree for any person wishing to qualify in a specialty such as nuclear or optics physics in research and development;
- a Ph.D. for basic research in universities and the more advanced research positions in government or private industry.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Physicists with managerial ability may advance to 1131-126 MANAGER, PHYSICAL SCIENCES PROGRAM. After obtaining further academic qualifications and experience, physicists may be in charge of special research programs.

Transfer

Physicists with additional training may transfer to other occupations within this chapter. Transfers may be to teaching occupations in universities and community colleges, or in secondary schools, for those with appropriate qualifications and certification.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Physicists require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- activities of an abstract and creative nature;
- activities leading to satisfaction from tangible results;
- dealing with things and objects.

Temperaments

- evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against sensory or judgmental criteria, such as determining appropriate experiments or projects and interpreting scientific data;
- the direction, control and planning of an entire activity or the activities of others;
- a variety of duties often characterized by frequent change.

METEOROLOGISTS

WORK PERFORMED

This chapter includes occupations concerned with studying the structure and behaviour of the atmosphere; conducting pure research in atmospheric science, and applied research concerned with the solution of problems; and the preparation of weather forecasts. Worker functions include: analyzing and synthesizing data obtained by observation and investigation to develop and interpret weather forecasts and other meteorological information; compiling research data to develop knowledge, concepts and facts; skilfully using scientific instruments to obtain accurate readings and make precise measurements; and supervising the work of technologists, technicians and other support staff. Work activities include: preparing weather maps and forecasts; investigating natural or induced precipitation, cloud physics, air pollution, atmospheric turbulence, winds and temperatures; and preparing mathematical models for the solution of problems by computers.

LIST OF OCCUPATIONAL TITLES

		GED	SVP
2114-110	METEOROLOGIST (prof. & tech., n.e.c.)	6	8

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>3</u>	4	3	3	5	4		L 47	B 23	6	8	79	09Y4

APTITUDES AND CAPACITIES

Meteorologists require:

- learning ability and intellectual capacity to understand and apply a knowledge of scientific theories and data and reasoning ability to make judgments on the natural laws governing the science of meteorology;
- verbal ability to understand the meaning of technical words and ideas associated with them and to communicate clearly in written or oral form;
- numerical ability to make advanced mathematical and statistical computations quickly and accurately;
- spatial perception to visualize relative paths or positions of stationary and moving weather fronts and relate these phenomena, using symbols on maps and charts;

form perception to detect pertinent details in graphic or tabular material, such as satellite photographs, weather maps, and statistical data, to make visual comparisons and discriminations, and to see slight differences in shapes and shadings of figures and widths and lengths of lines;

- clerical perception to observe differences in copy and recognize errors on charts, maps and on other meteorological data, and to avoid perceptual errors in mathematical computations;
- capacity for reaching, handling and fingering scientific instruments used for weather recording and for plotting data;
- visual acuity, both near and far;
- capacity to work inside in controlled environmental conditions, or outside in extreme weather conditions subject to marked temperature changes.

TRAINING AND ENTRY REQUIREMENTS

Meteorologists normally require:

- a four-year university general sciences program with emphasis on mathematics and physics leading to a bachelor's degree; and
- post-graduate studies leading to a master's or Ph.D. degree, depending on the complexity of the work; or
- a one year program of training provided by the employers.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

As a Meteorologist gains experience and proficiency and has the necessary supervisory and leadership qualities, he may be employed in more responsible positions as a supervisor of an operational or regional office, or as an administrator in either regional or headquarters organizations, particularly in the government service.

Transfer

Normally, Meteorologists do not transfer to other occupations but they may transfer to other specialties within meteorology provided they take the additional training.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Meteorologists require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- work that is basically non-social in nature, and is carried on in relation to scientific techniques.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria, such as making use of past experience to evaluate information based largely on observations and reports;
- the precise attainment of set limits, tolerances or standards, such as achieving a high degree of accuracy in forecasting and in the preparation of detailed weather charts and maps;
- the direction, control and planning of an entire activity or the activities of others.

PHYSICAL SCIENCES TECHNOLOGISTS AND TECHNICIANS

WORK PERFORMED

This chapter includes occupations concerned with technological and technical work in support of a physical science specialization, such as chemistry, physics, geology, geophysics, textiles and meteorology. Worker functions include: skilfully using special tools and test equipment to conduct qualitative and quantitative analyses and to control factors, such as temperature, pressure, flow of liquid and viscosity; analyzing data obtained from studies and experiments; and collating and classifying this information for use by scientists and other technical workers. Work activities include: assisting scientists and other technical workers in the research, design and development of products, and to devise systems and processes; constructing, installing, manufacturing, repairing, calibrating or modifying standard equipment or systems; incorporating design details into drawings; determining work procedures; diagnosing complex test equipment or process malfunctions; and conducting work studies and preparing charts, graphs and other supporting data for reports.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
2117-110	CHEMICAL TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2117-122	GEOPHYSICAL TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
2117-114	FOREST-PRODUCTS TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2117-126	LABORATORY PHYSICAL SCIENCE TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
2117-118	GEOLOGICAL TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2117-130	TEXTILE TECHNOLOGIST (prof. & tech., n.e.c.)	5	7

B

		GED	SVP			GED	SVP
2117-240	ASSAYER (prof. & tech., n.e.c.)	4	6	2117-264	LABORATORY PHYSICAL SCIENCE TECHNICIAN (prof. & tech., n.e.c.)	4	6
2117-244	WATER-PURIFICATION TECHNICIAN (waterworks)	4	6				
2117-248	CHEMICAL TECHNICIAN (prof. & tech., n.e.c.)	4	6	2117-268	TEXTILE TECHNICIAN (prof. & tech., n.e.c.)	4	6
2117-252	GEOLOGICAL TECHNICIAN (prof. & tech., n.e.c.)	4	6	2117-272	GEOPHYSICAL-EQUIPMENT OPERATOR, AIRBORNE (prof. & tech., n.e.c.)	4	6
2117-256	HYDROLOGY TECHNICIAN (prof. & tech., n.e.c.)	4	6				
2117-260	METEOROLOGICAL TECHNICIAN (prof. & tech., n.e.c.)	4	6	2117-276	GEOPHYSICAL TECHNICIAN (prof. & tech., n.e.c.)	4	6

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>3</u>	3	3	<u>3</u>	3	5	<u>3</u>	L 4567	I-B 67	5	7	791	0Y
			<u>3</u>	<u>3</u>	<u>2</u>						4						
B	<u>2</u>	<u>3</u>	<u>3</u>	3	<u>2</u>	3	3	<u>3</u>	3	5	<u>3</u>	L-M 4567	I-B 4567	4	6	791	0Y
		<u>2</u>	<u>2</u>	<u>2</u>	3	<u>2</u>					4						

APTITUDES AND CAPACITIES

Workers in A and B require:

- learning ability to understand and apply scientific or technical principles and work methods in a research laboratory, on a production line or at a work site;
- verbal ability to understand and use scientific and technical terminology, prepare reports and communicate effectively in oral or written form;
- numerical ability to compute chemical, geological, geophysical or other physical science problems;
- spatial perception to observe and understand the arrangement and relationship of physical properties in matter, and drawings, maps or survey detail;
- form perception to observe and compare consistency of chemical compounds, or to interpret recordings of quantometers, spectrometers, densitometers or seismographs;
- finger dexterity to manipulate laboratory test equipment, and to calibrate measuring devices;
- colour discrimination to recognize similarities or differences in colour, chemical solutions or in rock samples;

- capacity to discriminate various sounds and changes in sound pitch when conducting geophysical and acoustic studies;
- visual acuity, good field of vision and depth perception when working with simple and complex magnification devices;
- capacity to work in conditions where there are possible hazards from equipment, exposure to fumes, odours, dust, gases, mists, volatile liquids and caustic chemicals or poor ventilation;

In addition, workers in B require:

- clerical perception to observe differences in copy, proofread numbers and words, and avoid errors in mathematical computations;
- capacity to perform medium work requiring frequent lifting of objects weighing up to twenty pounds and occasionally carrying or moving objects weighing up to fifty pounds;
- capacity to work in conditions with a moisture content sufficient to cause bodily discomfort;
- capacity to work in close proximity to noises and vibrations, either constant or intermittent, which could cause distraction or possible injury to the sense of hearing.

TRAINING AND ENTRY REQUIREMENTS

Workers in Cluster A generally require:

- secondary school graduation; and either,
- graduation from a community-college program of two to three years in one of the physical sciences, and up to two years experience on-the-job, under the supervision of a physical scientist;

OR

- four years experience on-the-job, supplemented by a part-time or self-study program in their physical-science specialty.

Workers in Cluster B generally require:

- training and experience somewhat similar to that for Cluster A, but to a lesser extent.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Technicians in Cluster B with the necessary qualifications and experience may advance to occupations in Cluster A.

Technologists and technicians with a supervisory ability and leadership qualities may advance to supervisory occupations.

Transfer

Transfers are limited between occupations in these clusters due to the high degree of specialization and training required.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- activities that are non-social in nature, and are carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- evaluation of information through measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

OCCUPATIONS IN PHYSICAL SCIENCES, N.E.C.

This group includes occupations, not elsewhere classified, concerned with research and related activities in the physical sciences.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																	
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.		
		G	V	N	S	P	Q	K	F	M	E	C							
2119-110	METALLURGIST, PHYSICAL (prof. & tech., n.e.c.)	<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>2</u>	4	3	3	3	5	4	L 47	I 367	6	8	781	90Y45	
2119-114	FIREARMS EXAMINER (gov. serv.)	<u>3</u>	3	3	3	<u>2</u>	3	4	4	4	5	4	L 457	I 6	4	7	791	0Y	
2119-118	PROSPECTOR (mining & quarrying)	<u>3</u>	3	3	3	<u>3</u>	<u>3</u>	4	4	4	<u>4</u>	4	3	H 3467	O 6	4	7	791	096Y
2119-122	DOCUMENT EXAMINER (gov. serv.)	<u>2</u>	3	3	3	<u>2</u>	4	4	4	4	5	4	S 47	I	4	6	71	90Y	
2119-126	PALEONTOLOGICAL-LABORATORY HELPER (prof. & tech., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	4	L 47	I	3	4	13	23Y	

AGRICULTURISTS AND RELATED SCIENTISTS

WORK PERFORMED

This chapter includes occupations concerned with conducting research into the growth, genetics and viability of plants and animals, and the nature and composition of soils to extend the knowledge of agriculture and horticulture and apply this knowledge to the development, propagation and conservation of plants and animals. Worker functions include: synthesizing and analyzing data collected during soil, crop or livestock studies; supervising and co-ordinating the work of technologists, technicians and other support staff; and skilfully using technical equipment and other work aids to achieve precise standards during research and experimentation. Work activities include: studying the location, characteristics and composition of soils; controlling breeding experiments on plants and animals; developing new methods of processing and storing agricultural products; and advising farmers on various aspects of agriculture, horticulture and animal husbandry.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
2131-110	AGRICULTURAL SCIENTIST (prof. & tech., n.e.c.)	6	8	2131-122	PLANT SCIENTIST (prof. & tech., n.e.c.)	6	8
2131-114	ANIMAL SCIENTIST (prof. & tech., n.e.c.)	6	8	2131-126	SOIL SCIENTIST (prof. & tech., n.e.c.)	6	8
2131-118	FOOD SCIENTIST (prof. & tech., n.e.c.)	6	8	2131-130	HORTICULTURIST (prof. & tech., n.e.c.)	5	8

B

		GED	SVP
2131-134	FIELD SERVICE MAN (prof. & tech., n.e.c.)	5	8

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>1</u>	<u>1</u>	<u>1</u>	4	<u>3</u>	3	4	3	3	5	4	S-L 4567	B-I	6-5	8	781	90Y1
	<u>2</u>	<u>2</u>	<u>2</u>	3	<u>2</u>	4					3						
B	<u>2</u>	<u>2</u>	<u>2</u>	4	<u>3</u>	4	4	3	3	4	4	L 4567	B	5	8	76	90Y51

APTITUDES AND CAPACITIES

Agriculturists and Related Scientists require:

- learning ability to understand and apply the basic laws of nature and scientific methods of investigation, work with theoretical concepts, use reasoning and sound judgment, intellectual capacity to acquire the necessary academic background;
- verbal ability to understand the use and the terminology associated with agricultural sciences, and express or exchange ideas clearly in written or oral form;
- numerical ability to understand and apply advanced mathematics, devise formulae for solving unknown variables, and understand and apply statistical methods;
- form perception to observe detail in objects or in pictorial or graphic material, make visual comparisons and discriminations and detect slight differences in organs and tissues during microscopic examinations;
- capacity to handle, finger and feel objects or materials to determine characteristics such as size, shape, temperature and texture;
- near visual acuity to discern fine detail and colour discrimination, especially for microscopic examinations or simple magnifications;
- capacity to work inside under controlled environmental conditions, and outside while subject to extremes of weather.

TRAINING AND ENTRY REQUIREMENTS

Agriculturists and Related Scientists normally require:

- a bachelor's degree in agricultural science; plus
- two to four years on-the-job training.

A master's degree is generally required for more responsible government, management or applied research positions; a Ph.D. degree is required for advanced positions in basic research. Some provinces have legislation which require registration with a provincial association to practice as professional agrologists.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Agriculturists and Related Scientists with managerial ability may advance to occupations, such as 1131-122 MANAGER, LIFE SCIENCES PROGRAM or 1131-126 MANAGER, PHYSICAL SCIENCES PROGRAM.

Transfer

Agriculturists and Related Scientists may transfer to other agricultural specialties within this chapter provided they have completed the necessary academic qualifications, or they may transfer to teaching positions in an agricultural college or university, such as 2711-112 UNIVERSITY TEACHER, AGRICULTURE.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Agriculturists and Related Scientists require significant interests in, and dispositions for work involving the following:

A

Interests

- activities of a scientific and technical nature;
- activities of an abstract or creative nature;
- dealing with things and objects.

Temperaments

- the evaluation of information against sensory or judgmental criteria such as collecting, organizing and interpreting scientific data relating to agricultural and genetic experiments;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B

Interests

- activities of a scientific and technical nature;
- activities concerned with people and the communication of ideas.

Temperaments

- the evaluation of information against sensory or judgmental criteria;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- dealing with people in actual job duties beyond giving and receiving instructions;
- a variety of duties often characterized by frequent change.

BIOLOGISTS AND RELATED SCIENTISTS

WORK PERFORMED

This chapter includes occupations concerned with conducting pure and applied research into all forms of living organisms and vital processes, their relationship to each other and to their environment. Worker functions include: analyzing and synthesizing data collected from research; supervising and co-ordinating the activities of technologists and technicians; and skilfully using technical equipment and other work aids during biological studies. Work activities include: studying the origin, development, growth, reproduction, structure, function, distribution and other life phenomena of a single species or community of species; conducting laboratory and field studies; and observing characteristics of, and classifying species and types.

LIST OF OCCUPATIONAL TITLES

GED SVP			GED SVP		
<i>Botanists and Zoologists</i>			2133-174 SOIL BACTERIOLOGIST (prof. & tech., n.e.c.)	6	8
2133-110 AQUATIC BIOLOGIST (prof. & tech., n.e.c.)	6	8	<i>Pathologists, Pharmacologists and Physiologists</i>		
2133-114 BOTANIST (prof. & tech., n.e.c.)	6	8	2133-194 ANATOMIST (prof. & tech., n.e.c.)	6	8
2133-118 ENTOMOLOGIST (prof. & tech., n.e.c.)	6	8	2133-198 PATHOLOGIST, ANIMAL (prof. & tech., n.e.c.)	6	8
2133-122 MYCOLOGIST (prof. & tech., n.e.c.)	6	8	2133-202 PATHOLOGIST, MEDICAL (prof. & tech., n.e.c.)	6	8
2133-126 ZOOLOGIST (prof. & tech., n.e.c.)	6	8	2133-206 PATHOLOGIST, PLANT (prof. & tech., n.e.c.)	6	8
<i>Bacteriologists and Other Microbiologists</i>			2133-210 PHARMACOLOGIST (prof. & tech., n.e.c.)	6	8
2133-146 BACTERIOLOGIST (prof. & tech., n.e.c.)	6	8	2133-214 PHYSIOLOGIST (prof. & tech., n.e.c.)	6	8
2133-150 FISHERY BACTERIOLOGIST (prof. & tech., n.e.c.)	6	8	2133-234 BIOCHEMIST (prof. & tech., n.e.c.)	6	8
2133-154 FOOD BACTERIOLOGIST (prof. & tech., n.e.c.)	6	8	2133-238 BIOPHYSICIST (prof. & tech., n.e.c.)	6	8
2133-158 INDUSTRIAL BACTERIOLOGIST (prof. & tech., n.e.c.)	6	8	2133-242 CELL BIOLOGIST (prof. & tech., n.e.c.)	6	8
2133-162 MEDICAL BACTERIOLOGIST (prof. & tech., n.e.c.)	6	8	2133-246 CLINICAL CHEMIST (prof. & tech., n.e.c.)	6	8
2133-166 MICROBIOLOGIST (prof. & tech., n.e.c.)	6	8	2133-250 GENETICIST (prof. & tech., n.e.c.)	6	8
2133-170 PHARMACEUTICAL BACTERIOLOGIST (prof. & tech., n.e.c.)	6	8	2133-254 MOLECULAR BIOLOGIST (prof. & tech., n.e.c.)	6	8
			2133-258 PARASITOLOGIST (prof. & tech., n.e.c.)	6	8

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>	2	3	3	2	3	5	3		S 47	I 6	6	8	781	09Y1
		<u>2</u>	<u>1</u>	<u>1</u>		2	3			<u>2</u>							

APTITUDES AND CAPACITIES

Biologists and Related Scientists require:

- learning ability and the intellectual capacity to understand and apply biological theories and concepts, and make reasoned judgments;
- verbal ability to understand the meanings and use of biological terminology and ideas associated with them and to communicate clearly both orally and in writing;
- numerical ability to understand and apply advanced mathematics for purposes such as constructing mathematical models to determine the relation of several variables in the fields of genetics and biophysics, and to evaluate the results of these models, describing cycles or control aspects at various levels of living organisms;
- spatial perception to visualize forms and relationships of objects, such as the development, arrangement and structure of organisms;

- form perception to see pertinent detail in objects or specimens, to make visual comparisons and discriminations and to ascertain their differences or similarities in shapes, shadings and relative sizes during microscopic examinations;
- capacity for handling and fingering objects, materials and scientific instruments;
- near visual acuity to see size, shape, form and other characteristics of objects by natural or other means and good colour discrimination;
- adaptability to possible hazardous conditions when working in a laboratory with pathogenic micro-organisms or viruses.

TRAINING AND ENTRY REQUIREMENTS

Biologists and Related Scientists generally require:

- a four-year bachelor's degree in the biological sciences, and;
- post-graduate studies of two or more years leading to a master's degree together with work experience in the specialty.

For the occupations of 2133-198 PATHOLOGIST, ANIMAL and 2133-202 PATHOLOGIST, MEDICAL, a doctoral degree in veterinary medicine or medicine respectively is required followed by post-graduate studies in the particular specialization.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Biologists and Related Scientists with a potential for planning, organizing, directing and controlling activities of others may advance to 1132-122 MANAGER, LIFE SCIENCES PROGRAM. Advancement may be from lower to higher grades of positions in establishments where a grading system is in effect.

Transfer

Normally, Biologists and Related Scientists do not transfer to other disciplines, however, they may transfer to other specialties within biology provided they have taken additional training in that specialty. If they acquire the necessary qualifications, they may teach in secondary schools, community colleges or universities, for example as 2711-130 UNIVERSITY TEACHER, LIFE SCIENCES.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interest in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- activities of an abstract and creative nature;
- activities dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

LIFE SCIENCES TECHNOLOGISTS AND TECHNICIANS

WORK PERFORMED

This chapter includes occupations concerned with technological and technical work in support of a life science specialization such as agriculture, botany, biology, zoology and forestry. Worker functions include: skilfully using technical equipment and other work aids to conduct experiments and analysis to achieve desired quality and work standards; compiling, collating, classifying and reporting on results of experiments, tests and analyses; and examining and evaluating data obtained from life science studies and experiments. Work activities include: assisting life scientists and other technical workers in research, design and development of special test equipment and experiments; and conducting experiments, tests and analyses, and organizing results of these studies.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
2135-110	AGRICULTURAL TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2135-138	BOTANICAL TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
2135-130	BACTERIOLOGICAL TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2135-142	ZOOLOGICAL TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
2135-134	BIOLOGICAL TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2135-162	FISH-FARM TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
				2135-166	FOOD TECHNOLOGIST (prof. & tech., n.e.c.)	5	7

B

		GED	SVP			GED	SVP
2135-220	AGRICULTURAL TECHNICIAN (prof. & tech., n.e.c.)	4	6	2135-248	BOTANICAL TECHNICIAN (prof. & tech., n.e.c.)	4	6
2135-240	BACTERIOLOGICAL TECHNICIAN (prof. & tech., n.e.c.)	4	6	2135-252	ZOOLOGICAL TECHNICIAN (prof. & tech., n.e.c.)	4	6
2135-244	BIOLOGICAL TECHNICIAN (prof. & tech., n.e.c.)	4	6	2135-272	FOREST TECHNICIAN (prof. & tech., n.e.c.)	4	6

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	<u>2</u>	4 3	<u>2</u>	3	3	<u>2</u> <u>3</u>	3	5	<u>3</u>	S-L 347	I-B 67	5	7	791	0Y9
B	<u>2</u>	<u>3</u>	<u>3</u>	4 3	<u>2</u> <u>3</u>	3	3	<u>3</u>	3	5	<u>3</u>	L-M 47	I-B 67	4	6	791	0Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply scientific principles and methods to life science studies and experiments in agriculture, botany, zoology and biology;
- verbal ability to understand and use life sciences terminology to communicate effectively in oral or written form;

- numerical ability to make arithmetic, algebraic and geometric computations concerning population densities, distribution growth, generic development and other statistics applicable to life sciences investigations;
- form perception to detect pertinent detail when studying and experimenting with micro-organisms, plant or animal specimens;
- finger dexterity to adjust microscopes and other optical instruments;

- colour discrimination to perceive or recognize similarities or differences when examining biological specimens;
- capacity to reach, handle, finger or feel objects to determine their shape, size, temperature or texture;
- near visual acuity and depth perception when working with microscopes and other magnification devices;
- adaptability to conditions where there is a risk to health from exposure to viruses, fumes, dust, liquids and other dangers.

In addition, for workers in Cluster A:

- capacity to stoop, kneel and crouch when collecting or studying plant and animal life in the field.

In addition, for workers in Cluster B:

- capacity to perform medium work requiring the frequent lifting of objects weighing up to twenty pounds and occasionally moving or carrying of objects weighing up to fifty pounds.

TRAINING AND ENTRY REQUIREMENTS

Life Sciences Technologists normally require:

- secondary school graduation and, depending on the complexity of the occupation; either,
- graduation from a community-college program of two to three years in a life science; and
- two or more years of on-the-job experience, under the supervision of a life scientist;

OR

- four or more years of on-the-job experience, supplemented by part-time in the science specialty.

Life Sciences Technicians normally require training and experience similar to that for Technologists, but usually of shorter duration.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Technologists and technicians with sufficient experience, leadership abilities and supervisory potential may advance to supervisory occupations of senior technologist or senior technician. Technicians in Cluster B may advance within their own specialty to technologist occupations in Cluster A.

Transfers

Transfers are limited for technologist and technician and usually occur within their own clusters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- activities that are non-social in nature, and are carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- evaluation of information through measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

Additionally, for Cluster A:

- evaluation of information against sensory or judgmental criteria.

GROUP 2139

OCCUPATIONS IN LIFE SCIENCES, N.E.C.

This group includes occupations, not elsewhere classified, concerned with research in the life sciences, and with other related life-science activities.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
2139-110	FORESTER (prof. & tech., n.e.c.)	<u>1</u>	<u>1</u>	3	3	<u>3</u>	3	4	3	3	4	3	L 567	B	6	8	78	9014
2139-114	INTERPRETIVE NATURALIST (gov. serv.)	<u>2</u>	<u>2</u>	3	<u>3</u>	<u>3</u>	3	4	4	4	4	3	L 2456	B	5	8	76	9451

RESEARCH, DESIGN AND DEVELOPMENT ENGINEERS

(except Chapter 2141 - Architects)

WORK PERFORMED

This chapter includes occupations concerned with conducting basic and applied research directed toward investigating and evaluating engineering and scientific principles and applying the results to the design and development of equipment, structures, processes, systems and products. Worker functions include: analyzing and synthesizing data collected from research and developmental studies to conceive a practical design; exercising considerable judgment in conducting qualitative and quantitative analyses and experiments to achieve high standards of design and workmanship; skilfully using technical equipment and work aids; and supervising technicians, technologists, craftsmen and other workers. Work activities include: developing and extending knowledge through exploratory research; using results of research to develop new and improved products, processes and systems in anticipation of market needs, and to reduce costs; preparing specifications required in installation, operation and maintenance; conferring with other engineers and scientists to solve problems of design and development; and providing consulting services to clients.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
	<i>Chemical Engineers</i>			2147-114	TOOL ENGINEER (prof. & tech., n.e.c.)	6	8
2142-110	CHEMICAL ENGINEER, DESIGN AND DEVELOPMENT (prof. & tech., n.e.c.)	6	8		<i>Aerospace Engineers</i>		
2142-114	CHEMICAL ENGINEER, RESEARCH (prof. & tech., n.e.c.)	6	8	2155-110	AEROSPACE ENGINEER, DESIGN AND DEVELOPMENT (prof. & tech., n.e.c.)	6	8
	<i>Civil Engineers</i>			2155-114	AEROSPACE ENGINEER, MASS PROPERTIES (prof. & tech., n.e.c.)	6	8
2143-110	MATERIALS AND TESTING ENGINEER (prof. & tech., n.e.c.)	6	8		<i>Nuclear Engineers</i>		
2143-114	STRUCTURAL-DESIGN ENGINEER (prof. & tech., n.e.c.)	6	8	2157-110	NUCLEAR ENGINEER (prof. & tech., n.e.c.)	6	8
	<i>Electrical Engineers</i>				<i>Architects and Engineers, n.e.c.</i>		
2144-110	DESIGN AND DEVELOPMENT ENGINEER, ELECTRICAL AND ELECTRONIC (prof. & tech., n.e.c.)	6	8	2159-110	AGRICULTURAL ENGINEER (prof. & tech., n.e.c.)	6	8
2144-114	RESEARCH ENGINEER, ELECTRICAL AND ELECTRONIC (prof. & tech., n.e.c.)	6	8	2159-114	CERAMICS ENGINEER (prof. & tech., n.e.c.)	6	8
	<i>Mechanical Engineers</i>			2159-118	MARINE ENGINEER (ship & boat bldg.)	6	8
2147-110	POWER ENGINEER, MECHANICAL (prof. & tech., n.e.c.)	6	8	2159-122	SHIP-CONSTRUCTION ENGINEER (prof. & tech., n.e.c.)	6	8
				2159-126	GAS AND STEAM-DISTRIBUTION ENGINEER (prof. & tech., n.e.c.)	6	8
				2159-130	CRYOGENICS ENGINEER (prof. & tech., n.e.c.)	6	8

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
1	1	1	1	2	4	4	4	4	5	5		L 4567	I-B 6	6	8	78	0Y495
									4	4							

APTITUDES AND CAPACITIES

Research, Design and Development Engineers normally require:

- learning ability and intellectual capacity to understand and apply the principles, concepts and knowledge of engineering relevant to research, design and development;
- verbal ability to understand the meaning of engineering terminology and ideas associated with them, and to communicate clearly, orally and in writing;
- numerical ability to apply advanced mathematical computations quickly and accurately;
- spatial perception to comprehend forms in space, understand relationships of plane and solid objects, and to visualize finished

products, the fitting together of parts, and relationships of their movements;

- form perception to observe pertinent detail in objects or in pictorial or graphic material, and to make visual comparisons and discriminations to see slight differences in shapes and shadings of figures, and widths and lengths of lines in drawings and designs;
- capacity to reach, handle, finger and feel objects and materials;
- visual acuity both near and far, depth perception, and a good field of vision;
- adaptability to conditions where there is a definite risk of bodily injury when working in and around construction sites and other engineering projects.

TRAINING AND ENTRY REQUIREMENTS

Research, Design and Development Engineers normally require:

- a four-or five-year university program leading to a bachelor's degree in engineering or applied science; and
- two or more years of on-the-job experience under the direction of a professional engineer.

A master's or doctor's degree may be required for research and advanced design and development work.

To practise as a professional engineer within the meaning of the Act, and to use the title "professional engineer" — P. Eng. — registration with a provincial association of professional engineers is required.

There are two methods of becoming a professional engineer. One is outlined above. The second method is by the passing of examinations set by the appropriate provincial association of professional engineers plus two or more years of experience under the direction of a professional engineer.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Engineers may advance to 1131-118 MANAGER, ENGINEERING after acquiring considerable experience in planning, organizing, directing and controlling engineering programs. Engineers in government and industry may also advance within the grading system that prevails. Some engineers become self-employed and establish themselves as consultants.

Transfer

Transfers may occur for some within a specialization of their own field of employment. Others may transfer to teaching occupations in community colleges and universities, or in secondary schools, provided they have the necessary qualifications and a teaching certificate.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to engineering research, design and development occupations require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature, such as the practical application of theories and principles;
- activities of an abstract and creative nature.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances, or standards;
- the direction, control and planning of an entire activity or the activities of others;
- the evaluation of information against sensory or judgmental criteria;
- dealing with people in actual job duties beyond giving and receiving instructions.

PRODUCTION, CONSTRUCTION, INSTALLATION, OPERATION AND MAINTENANCE ENGINEERS

(except Chapter 2141 - Architects)

WORK PERFORMED

This chapter includes occupations concerned with advising on, and co-ordinating the technical control and improvement of manufacturing processes, executing production programs, and technical direction of erection, assembly, installation, servicing, repair and replacement of buildings, plants, machines and other equipment. Worker functions include: co-ordinating various kinds of engineering programs; analyzing data and making decisions; using considerable judgment in determining the most economical and feasible production methods to achieve high standards of quality, quantity and workmanship; skilfully using technical equipment and work aids; and supervising technicians, technologists, craftsmen and other workers. Work activities include: studying design proposals and providing advice concerning the most effective arrangement of equipment to achieve maximum economic production; planning and directing the construction of buildings, marine vessels, floating structures of all types, and electrical-transmission systems, and the installation and operation of equipment in mines, refineries, factories and other establishments; establishing and overseeing a regular maintenance program which includes inspection, cleaning, parts replacement and general overhaul; determining cause of and recommending preventive measures in controlling fires; and evaluating productivity of oil wells and reservoirs.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
	<i>Chemical Engineers</i>			2144-122	ELECTRONIC ENGINEER, GENERAL (prof. & tech., n.e.c.)	5	8
2142-118	CHEMICAL ENGINEER, PRODUCTION (prof. & tech., n.e.c.)	5	8	2144-126	AUDIO ENGINEER (prof. & tech., n.e.c.)	5	8
				2144-130	DISTRIBUTION ENGINEER (elec. power)	5	8
	<i>Civil Engineers</i>			2144-134	ELECTRICAL AND ELECTRONIC AEROSPACE ENGINEER (air & space-craft)	5	8
2143-118	CIVIL ENGINEER, GENERAL (prof. & tech., n.e.c.)	5	8	2144-138	ELECTRICAL-EQUIPMENT ENGINEER (prof. & tech., n.e.c.)	5	8
2143-122	AIRPORT ENGINEER (prof. & tech., n.e.c.)	5	8	2144-142	ELECTRICAL-SYSTEMS-PLANNING ENGINEER (prof. & tech., n.e.c.)	5	8
2143-126	BUILDINGS AND BRIDGE ENGINEER (prof. & tech., n.e.c.)	5	8	2144-146	ILLUMINATING ENGINEER (prof. & tech., n.e.c.)	5	8
2143-134	HIGHWAY ENGINEER (prof. & tech., n.e.c.)	5	8	2144-150	PLANT ENGINEER, ELECTRICAL (prof. & tech., n.e.c.)	5	8
2143-138	IRRIGATION AND DRAINAGE ENGINEER (prof. & tech., n.e.c.)	5	8	2144-154	SIGNAL ENGINEER (prof. & tech., n.e.c.)	5	8
2143-142	PIPELINE ENGINEER (prof. & tech., n.e.c.)	5	8	2144-158	TELEPHONE ENGINEER (prof. & tech., n.e.c.)	5	8
2143-146	RAILWAY ENGINEER (prof. & tech., n.e.c.)	5	8	2144-162	TRANSMISSION ENGINEER (elec. power)	5	8
2143-150	SOIL ENGINEER (prof. & tech., n.e.c.)	5	8		<i>Mechanical Engineers</i>		
2143-154	WATER-RESOURCES ENGINEER (prof. & tech., n.e.c.)	5	8	2147-118	MECHANICAL ENGINEER, GENERAL (prof. & tech., n.e.c.)	5	8
	<i>Electrical Engineers</i>			2147-122	AUTOMOTIVE ENGINEER (prof. & tech., n.e.c.)	5	8
2144-118	ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.)	5	8				

CHAPTER 214/215B

		GED	SVP			GED	SVP
2147-126	HEATING, VENTILATING AND AIR-CONDITIONING ENGINEER (prof. & tech., n.e.c.)	5	8	2154-118	RESERVOIR ENGINEER, PETROLEUM (prof. & tech., n.e.c.) <i>Aerospace Engineers</i>	5	8
2147-130	LUBRICATION ENGINEER (prof. & tech., n.e.c.)	5	8				
2147-134	MECHANICAL ENGINEER, GAS UTILIZATION (prof. & tech., n.e.c.)	5	8	2155-118	AEROSPACE ENGINEER, GENERAL (prof. & tech., n.e.c.)	5	8
2147-138	PROPULSION ENGINEER, AEROSPACE VEHICLES (air & space-craft)	5	8	2155-122	AEROSPACE ENGINEER, FLIGHT-TEST (air & space-craft)	5	8
2147-142	REFRIGERATION ENGINEER (prof. & tech., n.e.c.) <i>Metallurgical Engineers</i>	5	8	2155-126	AEROSPACE ENGINEER, MATERIALS AND PROCESSES (air & space-craft)	5	8
				2155-130	AEROSPACE ENGINEER, FLIGHT OPERATIONS (air & space-craft)	5	8
2151-110	METALLURGICAL ENGINEER (prof. & tech., n.e.c.) <i>Mining Engineers</i>	5	8	2155-134	AEROSPACE ENGINEER, FLIGHT SUPPORT (air & space-craft) <i>Architects and Engineers, n.e.c.</i>	5	8
2153-110	MINING ENGINEER (prof. & tech., n.e.c.) <i>Petroleum Engineers</i>	5	8	2159-134	GEOLOGICAL ENGINEER (prof. & tech., n.e.c.)	5	8
				2159-138	FOREST ENGINEER (forest. & log.)	5	8
2154-110	CHIEF-PETROLEUM ENGINEER (oil & nat. gas)	6	8	2159-142	WELDING ENGINEER (prof. & tech., n.e.c.)	5	8
2154-114	PETROLEUM ENGINEER (prof. & tech., n.e.c.)	5	8	2159-146	FIRE-PREVENTION ENGINEER (prof. & tech., n.e.c.)	5	8
				2159-150	TRAFFIC ENGINEER (prof. & tech., n.e.c.)	5	8
				2159-154	CORROSION ENGINEER (prof. & tech., n.e.c.)	5	8
				2159-158	LOGGING ENGINEER, OIL WELL (prof. & n.e.c.)	5	8

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	4	4	4	4	5	4	L 4567	B 6	5	8	79	Y045
<u>1</u>	<u>1</u>	<u>1</u>		<u>3</u>	3				4	5						

APTITUDES AND CAPACITIES

Production, Construction, Installation, Operation and Maintenance Engineers require:

- learning ability and intellectual capacity to understand and apply engineering concepts and principles to production processes, construction programs, and the installation, operation and maintenance of equipment;
- verbal ability to understand the meaning of engineering terminology and ideas associated with them, and to communicate clearly, orally and in writing;
- numerical ability to apply advanced mathematical computations quickly and accurately;
- spatial perception to understand relationships of plane and solid

objects, and to visualize finished products, relationship of parts of equipment and their movements;

- form perception to observe pertinent detail in objects or in pictorial or graphic material, and to make visual comparisons and discriminations to see slight differences in shapes and shadings of figures, and widths and lengths of lines in drawings and designs;
- capacity to reach, handle, finger and feel objects and materials;
- visual acuity both near and far, depth perception, and a good field of vision;
- adaptability to conditions where there is a definite risk of bodily injury when working in and around construction sites and other engineering projects.

TRAINING AND ENTRY REQUIREMENTS

Production, Construction, Installation, Operation and Maintenance Engineers normally require:

- a four-or five-year university program leading to a bachelor's degree in engineering or applied science; and

- two or more years of on-the-job experience under the direction of a professional engineer.

To practice as a professional engineer within the meaning of the Act, and to use the title “professional engineer”—P.Eng.—registration with a provincial association of professional engineers plus two or more years of experience under the direction of a professional engineer is required.

There are two methods of becoming a professional engineer. One is outlined above. The second method is by the passing of examinations set by the appropriate provincial association of professional engineers plus two or more years of experience under the direction of a professional engineer.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Engineers may advance to 1131-118 MANAGER, ENGINEERING after acquiring considerable experience in assisting with planning, organizing, directing and controlling engineering programs. Engineers in government and industry may also advance within the grading system that prevails. Some engineers become self-employed and establish themselves as consultants.

Transfer

Transfers may occur for some within specializations of their own field of employment. Others may transfer to teaching occupations in community colleges and universities, or in secondary schools, provided they have the necessary qualifications and a teaching certificate.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to engineering production, construction, installation, operation and maintenance occupations require significant interests in, and dispositions for work involving:

Interests

- activities of a scientific and technical nature, such as the practical application of theories and principles;
- activities which are basically non-social in nature and are carried on in relation to processes and techniques.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions.

INDUSTRIAL AND ENVIRONMENTAL ENGINEERS

(except Chapter 2141 – Architects)

WORK PERFORMED

This chapter includes occupations concerned with initiating and developing efficient production procedures to manufacture high-quality units in large quantities at economic cost, while maintaining low production overhead, and with introducing procedures to control pollution. Worker functions include: co-ordinating and planning procedures; analyzing and compiling data; supervising the work of technicians and other workers; and skilfully using a variety of technical equipment and work-aids. Work activities include: ascertaining production objectives and identifying problems; planning time and motion studies, and evaluating results against set standards; initiating or recommending changes in organization, work procedures, methods, equipment utilization and safety procedures; conducting health programs to control factors or stresses arising in a work situation which may cause inefficiency among workers; devising quality control procedures for production-line staff and other groups; developing new procedures for testing and evaluating raw materials and finished products; and studying pollution problems and recommending implementation of procedures for their control or elimination.

LIST OF OCCUPATIONAL TITLES

				GED	SVP					GED	SVP
<i>Civil Engineers</i>						2145-122	TIME-STUDY ENGINEER			5	8
2143-130	ENVIRONMENTAL ENGINEER			5	8		(prof. & tech., n.e.c.)	2145-126	MANUFACTURING ENGINEER	5	8
	(prof. & tech., n.e.c.)								(prof. & tech., n.e.c.)		
<i>Industrial Engineers</i>						2145-130	METHODS ENGINEER			5	8
2145-110	INDUSTRIAL ENGINEER,			5	8		(prof. & tech., n.e.c.)	2145-134	PRODUCTION ENGINEER	5	8
	GENERAL (prof. & tech., n.e.c.)						(prof. & tech., n.e.c.)		(prof. & tech., n.e.c.)		
2145-114	INDUSTRIAL HYGIENIST			5	8	2145-138	QUALITY-CONTROL ENGINEER			5	8
	(prof. & tech., n.e.c.)						(prof. & tech., n.e.c.)				
2145-118	INDUSTRIAL-SAFETY ENGINEER			5	8						
	(prof. & tech., n.e.c.)										

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>3</u>	4	4	4	4	5	4	S-L 567	I 67	5	8	796	Y09754
<u>1</u>	<u>1</u>	<u>1</u>		<u>2</u>	3					5						

APTITUDES AND CAPACITIES

Industrial and Environmental Engineers require:

- learning ability and the intellectual capacity to understand and apply engineering concepts and principles to efficiency of operation and environmental control;
- verbal ability to understand the meaning of engineering terminology and ideas associated with them, and to communicate effectively orally and in writing;
- numerical ability to perform advanced mathematical computations quickly and accurately;
- spatial perception to comprehend forms in space and to visualize problems of plant engineering concerning installation, arrangement or operations of production equipment;
- form perception to observe pertinent detail in objects or in pictorial or graphic material, and to make visual comparisons and discriminations to see slight differences in shapes and shadings of figures, and widths and lengths of lines in drawings and designs;
- visual acuity both near and far, depth perception and a good field of vision;
- adaptability to conditions where there is a definite risk of bodily injury when working in and around production lines and other engineering projects;
- adaptability to conditions where there are hazards from fumes, odours, toxic dust, vapours and mists.

TRAINING AND ENTRY REQUIREMENTS

Industrial and Environmental Engineers normally require:

- a four-or five-year university program leading to a bachelor's degree in engineering or applied science; and
- two or more years of on-the-job experience under the direction of a professional engineer.

To practise as a professional engineer within the meaning of the Act,

and to use the title "professional engineer" — P. Eng. — registration with a provincial association of professional engineers is required.

There are two methods of becoming a professional engineer. One is outlined above. The second method is by the passing of an examination set by the appropriate provincial association of professional engineers plus two or more years of experience under the direction of a professional engineer.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Engineers may advance to 1131-118 MANAGER, ENGINEERING after acquiring considerable experience in assisting with planning, organizing, directing and controlling engineering programs.

Engineers in government and industry may also advance within the grading system that prevails. Some engineers become self-employed and establish themselves as consultants.

Transfer

Transfers may occur for some within specializations of their own field of employment. Others may transfer to teaching occupations in community colleges and universities, or in secondary schools, provided they have the necessary qualifications and a teaching certificate.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to industrial and environmental engineering occupations require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature, such as the application of theories and principles;
- activities that are usually non-social in nature, and are carried on in relation to machines, processes and techniques;
- activities that are concerned with people and the communication of ideas.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria, such as developing new or more appropriate procedures for testing and evaluating raw materials and finished products;
- influencing people in their opinions, attitudes or judgments about ideas and things, such as initiating or recommending changes in organization, work procedures and equipment utilization and controlling environmental factors or stresses in a given work situation;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the direction, control and planning of an entire activity or the activities of others.

ARCHITECTS

WORK PERFORMED

This chapter includes occupations concerned with the design and construction of buildings and related structures, and aesthetic landscaping for parks, road development and other projects. Worker functions include: integrating analyses of data to develop concepts and architectural plans; exchanging ideas, information and opinions to formulate policies, programs and contracts; and skilfully using tools, work aids and considerable judgment to attain high standards of workmanship. Work activities include: designing and developing plans, specifications, detailed drawings, and lay-outs of land areas; and arranging contracts.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2141-110	ARCHITECT (prof. & tech., n.e.c.)	6	8	2141-114	LANDSCAPE ARCHITECT (prof. & tech., n.e.c.)	6	8

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
1	1	1	1	2	3	3	3	3	5	3	S 47	I-B	6	8	876	9Y045

APTITUDES AND CAPACITIES

Architects normally require:

- learning ability to acquire a thorough knowledge of architectural principles and practices, and to compile and evaluate information to develop building designs and make reasoned judgments when negotiating contracts;
- verbal ability to understand the meaning and use of technical words and ideas associated with them, to use them effectively both in written and oral form;
- numerical ability to perform advanced mathematical computations quickly and accurately;
- spatial perception to design buildings and plan lay-outs of structures,

using visual imagination to co-ordinate structural and ornamental elements into a unified design;

- form perception to observe pertinent detail in objects or in pictorial or graphic material and make visual comparisons and discriminations, and to see slight differences in shapes and shadings of figures and widths and lengths of lines;
- eye-hand-finger co-ordination to make precise measurements rapidly and accurately to prepare sketches or plans of buildings or landscaping;
- finger dexterity to manipulate small objects such as pencils, drawing pens and other draughting instruments;
- visual acuity — both near and far — colour discrimination, and depth perception to visualize objects in three dimensions.

TRAINING AND ENTRY REQUIREMENTS

Architects normally require:

- a four or five year program, in a university, leading to a bachelor's degree in architecture; or
- a two to three year course in architectural technology at a community college;

AND

- four to seven years of on-the-job experience under the direction of a registered architect; and
- completion of examinations set by the provincial association of architects.

Architects in all provinces must be registered members of their particular provincial association of architects.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Architects may advance to 1131-110 MANAGER, ARCHITECTURAL SERVICE after acquiring considerable experience in directing, organizing and controlling the services of an architectural department.

Transfer

A master's degree normally qualifies an individual for transfer to a teaching position in a university or a senior consultant's position in government or private industry.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to architectural occupations require significant interests in, and dispositions for work involving the following:

Interests

- activities of an abstract and creative nature such as those required in conceiving designs and plans for buildings, other structures and landscaping;
- scientific and technical activities, such as solving problems connected with the design and planning of buildings and structures;
- activities concerned with people and the communication of ideas, such as designing a structure to express a concept.

Temperaments

- evaluation of information against sensory or judgmental criteria, especially when interpreting clients' wishes, and arriving at decisions on the basis of personal viewpoint;
- precise attainment of set limits, tolerances and standards especially in the design of buildings and structures, and in adherence to building regulations and specifications;
- evaluation of information against measurable or verifiable criteria in deciding on type and merits of material to be used in various construction and landscaping projects;
- direction, controlling and planning of entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions.

SUPERVISORS, OTHER OCCUPATIONS IN ARCHITECTURE AND ENGINEERING

WORK PERFORMED

This chapter includes occupations concerned with supervising and co-ordinating the activities of surveyors, draughtsmen, and architectural and engineering technologists and technicians. Worker functions include: co-ordinating and determining or interpreting work procedures; supervising workers by assigning duties, maintaining harmonious relations and promoting efficiency. Work activities include: studying assignments and determining manpower requirements; estimating materials and supplies; establishing methods and assigning duties to meet work schedules; requisitioning materials and supplies; recommending or initiating personnel actions; maintaining personnel records; training workers; ensuring quality of work meets standards; and preparing progress or other reports.

LIST OF OCCUPATIONAL TITLES

2160-110 SUPERVISOR, ARCHITECTURAL AND ENGINEERING TECHNOLOGISTS AND TECHNICIANS
(prof. & tech., n.e.c.)

2160-114 SUPERVISOR, DRAUGHTSMEN
(prof. & tech., n.e.c.)

2160-118 SUPERVISOR, SURVEYORS
(prof. & tech., n.e.c.)

QUALIFICATIONS PROFILE

Aptitudes										
G	V	N	S	P	Q	K	F	M	E	C
<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>3</u>	4	4	4	5	4
<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>						3

PA	EC	GED	SVP	Ints.	Temps.
S-L 567	I-B	5-4	8	257	4501

APTITUDES AND CAPACITIES

Supervisors in this chapter require:

- learning ability and intellectual capacity to understand and apply supervisory principles and practices and those of his speciality, such as surveying, draughting or a particular branch of architectural or engineering technology, and the reasoning ability to effectively plan, organize and expedite work activities;
- verbal ability to comprehend scientific and technical terminology, and communicate effectively with superiors and subordinates;
- numerical ability to verify quality control arithmetic processes, and complicated survey, draughting or technical calculations quickly and accurately;
- spatial perception to visualize objects of two or three dimensions and their relationship to each other from architectural and engineering drawings;
- form perception to observe pertinent detail in architectural or engineering drawings, such as width and length of lines, or to compare details on photographs and maps, or to observe design imperfections on products, such as shape, size or irregular surfaces;
- clerical perception to perceive detail in tabular material and to observe differences in copy and avoid perceptual errors in arithmetic computation;
- visual acuity both near and far, depth perception and accommodation to check drawings or to examine products or processes.

TRAINING AND ENTRY REQUIREMENTS

Supervisors, Architectural or Engineering Technologists usually require:

- secondary school graduation, and depending on the complexity of the occupation;
- graduation from a community college program of two to three years in an architectural or engineering technology specialty and three or more years of on-the-job experience; or
- four or more years of on-the-job experience supplemented by part-time studies in their architectural or engineering specialty.

Supervisors, Draughtsmen usually require:

- secondary school graduation preferably with emphasis on mathematics and draughting;

- a two to four-year apprenticeship or similar form of on-the-job training;

OR

- graduation in draughting from an institute of technology or community college;
- one to two years on-the-job training;

AND

- at least two years of experience as a draughtsman.

Supervisors, Surveyors usually require:

- a bachelor's degree in civil engineering with surveying option or surveying engineering;

OR

- secondary school graduation at the university entrance level;
- complete an articulated apprenticeship program of at least four years;

AND

- pass examinations of a federal or provincial board of examiners; and
- at least two years experience as a surveyor.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Advancement opportunities are limited, however, supervisors with a potential for business and administration may establish their own services according to their basic profession. With the additional education, training and experience these supervisors could advance to management occupations, such as 1131-110 MANAGER, ARCHITECTURAL SERVICE or 1131-118 MANAGER, ENGINEERING.

Transfer

Opportunities for transfer are limited for supervisors in architectural or engineering technology or surveying; however, Supervisor, Draughtsmen could transfer to other specialties in draughting with little additional training and experience.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry into these supervisory occupations require significant interests in, and dispositions for work involving the following:

Interests

- business contacts with people;
- work resulting in prestige or the esteem of others;
- scientific and technical work.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change.

SURVEYORS

WORK PERFORMED

This chapter includes occupations concerned with conducting marine, land and subsurface surveys for the purpose of making maps, determining navigable channels, planning construction projects, delineating topographical features, and measuring and establishing boundaries and exact locations. Worker functions include: planning and co-ordinating surveys; making precise measurements while skilfully using survey instruments, technical equipment and other work aids; calculating latitude, longitude, angles, areas and other information for making maps; compiling and classifying information for charts, maps, legal descriptions and land-usage planning; supervising activities of survey crews; and calling out readings to note keeper. Work activities include: locating positions of rocks, reefs, shoals and aids to navigation and determining nature and depth of marine bottom; determining exact location and measurement of points, elevation lines, areas and contours of earth's surfaces; preparing land descriptions and drawings for land-usage planning; plotting data on field sheets; keeping records of work done or data obtained; and searching titles and other survey records in survey or registry offices.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
2161-110	HYDROGRAPHIC SURVEYOR (prof. & tech., n.e.c.)	5	7	2161-114	SURVEYOR (prof. & tech., n.e.c.)	5	7

B

		GED	SVP
2161-118	INSTRUMENT MAN (prof. & tech., n.e.c.)	4	7

C

		GED	SVP
2161-122	SURVEYOR HELPER (prof. & tech., n.e.c.)	3	4

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	2	<u>2</u>	<u>2</u>	<u>2</u>	3	<u>3</u>	<u>3</u>	3	4	3	M 234567	B 46	5	7	791	Y0451
B	<u>2</u>	2	<u>2</u>	<u>2</u>	<u>2</u>	3	<u>3</u>	<u>3</u>	3	4	3	M 234567	B 26	4	7	791	Y0
C	4	4	4	4	4	4	<u>3</u>	4	<u>3</u>	4	5	M 234567	B 26	3	4	91	12

APTITUDES AND CAPACITIES

Workers in this chapter require:

A and B

- learning ability and intellectual capacity to understand and apply the principles of surveying;
- numerical ability to perform mathematical calculations quickly and accurately as when determining angular and linear measurements and other information for map making;
- spatial perception to visualize and plot on maps and field sheets such

data as elevations, distances, contour lines and other topographical features;

- form perception to obtain precise readings from surveying instruments, to examine maps or aerial photographs, to prepare drawings, and to make or revise maps;
- eye-hand-finger co-ordination to make rapid and precise movements when adjusting and calibrating various types of survey instruments;
- finger dexterity to manipulate small objects with fingers when

making precise adjustments on survey instruments to obtain accurate readings.

C

- learning ability to understand and carry out instructions when assisting in survey operations;
- eye-hand co-ordination to rapidly and accurately manipulate surveyor's chain, record field notes and cut brush;
- manual dexterity to move hands and arms rapidly and accurately when swinging an axe or moving and holding a stadia rod.

Workers in this chapter also require:

- capacity to perform medium work requiring the lifting of objects weighing a maximum of fifty pounds and the frequent lifting or moving of objects weighing a maximum of twenty pounds;
- capacity to climb over rocks and rough terrain and maintain body equilibrium to prevent falling when walking, standing, crouching or running on narrow, slippery or uneven surfaces;

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- a bachelor's degree in civil engineering with surveying option or surveying engineering;

OR

- secondary school graduation at the university entrance level;
- complete an articulated apprenticeship program of at least four years;

AND

- pass examinations of a federal or provincial board of examiners.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Surveyors with leadership qualities and supervisory potential may advance to 2160-118 SUPERVISOR, SURVEYORS. Those with a potential for business and administration may establish their own survey service.

B

Instrument men may advance to the occupation of Surveyor in accordance with the requirements set forth in the training and entry section of this chapter.

C

Surveyor helpers may advance to the occupation of instrument man in accordance with the requirements set forth in the training and entry section of this chapter.

B

- a two to three-year program in surveying given by an institute of technology or community college; and
- two to four years of on-the-job training and experience.

C

- ten to twelve years general education; and
- three to six months on-the-job training and experience with a survey team.

Transfer

A

Transfers may be to the occupations of 2169-110 PHOTOGRAMMETRIST or 2169-114 AERIAL-PHOTOGRAPH ANALYST. Surveyors with a degree in civil engineering may transfer to some occupations in that field.

B

Transfer opportunities for instrument men are limited, but may be to occupations, such as 2117-118 GEOLOGICAL TECHNOLOGIST, 2117-122 GEOPHYSICAL TECHNOLOGIST and even to 7516-110 TIMBER CRUISER where the work performed and instruments used are somewhat similar.

C

Surveyor helpers may transfer to the occupation 4199-210 SURVEY NOTE-KEEPER or 4139-166 LAND MEASURER. Many other transfer possibilities exist such as to various helper occupations, and to some occupations in Chapter 7195, NURSERY AND RELATED WORKERS involving landscaping, caring for parks and other grounds and cutting brush.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

A and B

- activities of a scientific and technical nature;
- activities that are non-social in nature and are carried out in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

A

- precise attainment of set limits, tolerances or standards;
- evaluation of information against measurable or verifiable criteria;
- direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- variety of duties often characterized by frequent change.

B

- precise attainment of set limits, tolerances or standards;
- evaluation of information against measurable or verifiable criteria.

C

Interests

- activities that are non-social in nature and are carried out in relation to processes, machines and techniques.

Temperaments

- variety of duties often characterized by frequent change;
- repetitive or short-cycle operations carried out according to set procedures and sequences.

DRAUGHTSMEN**WORK PERFORMED**

This chapter includes occupations concerned with preparing working plans and detailed drawings from designers' sketches and specifications for engineering and manufacturing purposes, preparing or revising maps and charts, and preparing illustrations dealing with assembly, installation, operation, maintenance and repair of equipment. Worker functions include: working to close tolerances to produce detailed drawings of a high standard, while skilfully manipulating draughting instruments and other technical equipment; computing mathematical details and determining scaled dimensions for drawings; and analyzing and compiling information from preliminary sketches and relevant data. Work activities include: advising on problems of interpretation of drawings for production personnel; determining suitability of design, materials, tooling and fabrication sequences, utilizing knowledge of manufacturing methods; preparing bills of materials and estimating costs; and tracing plans and drawings prepared by other draughtsmen.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2163-110	DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.)	4	7	2163-146	DRAUGHTSMAN, HEATING AND VENTILATING (prof. & tech., n.e.c.)	4	7
2163-114	CARTOGRAPHER (prof. & tech., n.e.c.)	4	7	2163-150	DRAUGHTSMAN, MARINE (prof. & tech., n.e.c.)	4	7
2163-118	DESIGN CHECKER (prof. & tech., n.e.c.)	4	7	2163-154	DRAUGHTSMAN, MECHANICAL (prof. & tech., n.e.c.)	4	7
2163-122	DETAIL DRAUGHTSMAN (prof. & tech., n.e.c.)	4	7	2163-158	DRAUGHTSMAN, MINE (prof. & tech., n.e.c.)	4	7
2163-126	DRAUGHTSMAN, ARCHITECTURAL (prof. & tech., n.e.c.)	4	7	2163-162	DRAUGHTSMAN, ONE-TENTH SCALE (ship & boat bldg.)	4	7
2163-130	DRAUGHTSMAN, CIVIL (prof. & tech., n.e.c.)	4	7	2163-164	DRAUGHTSMAN, PETROLEUM EXPLORATION (prof. & tech., n.e.c.)	4	7
2163-134	DRAUGHTSMAN, COMMERCIAL (prof. & tech., n.e.c.)	4	7	2163-168	DRAUGHTSMAN, PIPE ORGAN (prof. & tech., n.e.c.)	4	7
2163-138	DRAUGHTSMAN, ELECTRICAL (prof. & tech., n.e.c.)	4	7	2163-172	EDITOR, MAP (prof. & tech., n.e.c.)	4	7
2163-142	DRAUGHTSMAN, ELECTRONIC (prof. & tech., n.e.c.)	4	7	2163-176	TECHNICAL ILLUSTRATOR (prof. & tech., n.e.c.)	4	7
				2163-178	TRACER (prof. & tech., n.e.c.)	3	4

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	3	<u>2</u>	<u>2</u>	<u>2</u>	<u>3</u>	2	<u>2</u>	3	5	4		S 4567	I	4	7	791	0Y
						3	<u>3</u>			3							

APTITUDES AND CAPACITIES

Draughtsmen require:

- learning ability to understand and apply the principles of draughting techniques, and to acquire and utilize a knowledge of various machines, building materials, engineering practices, mathematics, and other physical sciences;
- numerical ability to use arithmetic, algebraic, and geometric procedures to calculate scaled dimensions, stresses, fatigue factors and other data;
- spatial perception to perceive land contours from stereoscopic aerial photographs, to visualize three-dimensional objects and forms when representing them in two-dimensional plans or drawings, and to

visualize relations of parts to one another or to the whole structure for comprehension of product operation and construction;

- form perception to examine engineering drawings, photographs, sketches and maps, to prepare accurate detailed drawings, and to use precision measuring instruments and other draughting equipment;
- clerical perception to avoid errors in numerical calculations, to recognize and use draughting symbols, and to take readings from measuring instruments;
- finger dexterity to manipulate and make fine adjustments to draughting instruments;
- near visual acuity, depth perception and colour discrimination.

TRAINING AND ENTRY REQUIREMENTS

Draughtsmen normally require:

- secondary school graduation preferably with emphasis on mathematics and draughting; and
- a two to four-year apprenticeship or similar form of on-the-job training;

OR

- graduation in draughting from an institute of technology or community college and one to two years on-the-job training.

For 2163-176 TECHNICAL ILLUSTRATOR, a two to three year community college program in art, photography and printing, followed by one to two years of on-the-job training.

For 2163-178 TRACER, three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Draughtsmen with sufficient experience, leadership qualities and supervisory potential may advance to 2160-114 SUPERVISOR, DRAUGHTSMEN.

Transfer

Transfers may occur within this chapter since the initial training for all draughtsmen has a common base. However, there are some specialties which require additional training and experience.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations as draughtsmen require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- activities that are non-social in nature, and are carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances and standards.

ARCHITECTURAL AND ENGINEERING TECHNOLOGISTS AND TECHNICIANS

WORK PERFORMED

This chapter includes occupations concerned with technological and technical work in an engineering specialization, such as aerospace, chemical, civil, electrical, electronic, industrial, mechanical, mining, nuclear, petroleum, metallurgical and petrochemical engineering, or in architecture. Worker functions include: examining and evaluating data obtained from engineering studies and experiments; collating and classifying information for use by engineers and other technical workers; testing and analyzing materials and products by qualitative and quantitative analyses; and skilfully using and controlling technical equipment and tools to produce items, such as accurate scale drawings, fabricate one-of-a-kind components and calibrate equipment. Work activities include: assisting engineers and other technical workers in research, design and development of products, and to devise systems and processes for production; constructing, installing, manufacturing, repairing, calibrating or modifying standard equipment or systems; incorporating design details into drawings; determining work procedures; diagnosing complex test equipment or process malfunctions; and preparing charts, graphs and other supporting data for reports.

LIST OF OCCUPATIONAL TITLES

		A					
		GED	SVP			GED	SVP
2165-110	AEROSPACE-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2165-134	INDUSTRIAL-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
2165-114	ARCHITECTURAL TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2165-138	MARINE-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
2165-118	CHEMICAL-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2165-142	MECHANICAL-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
2165-122	CIVIL-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2165-146	METALLURGICAL-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
2165-126	ELECTRICAL-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2165-150	MINING-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
2165-130	ELECTRONIC-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7	2165-154	NUCLEAR-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
				2165-158	PETROCHEMICAL-ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.)	5	7
		B					
		GED	SVP			GED	SVP
2165-210	AEROSPACE-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6	2165-222	CIVIL-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6
2165-214	AGRICULTURAL-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6	2165-226	ELECTRICAL-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6
2165-218	CHEMICAL-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6	2165-230	ELECTRONIC-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6
				2165-234	GEOLOGICAL-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6

CHAPTER 2165

		GED	SVP			GED	SVP
2165-238	INDUSTRIAL-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6	2165-254	MINING-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6
2165-242	MARINE-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6	2165-258	NUCLEAR-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6
2165-246	MECHANICAL-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6	2165-262	PETROCHEMICAL-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6
2165-250	METALLURGICAL-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6	2165-266	PETROLEUM-ENGINEERING TECHNICIAN (prof. & tech., n.e.c.)	4	6

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	3	3	3	4	5	4	L	4567	I-B 67	5	7	791	0Y
				<u>3</u>	<u>3</u>		4	4	3									
B	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	3	3	<u>3</u>	<u>3</u>	5	4	L-M	4567	I-B 67	4	6	791	0Y
				<u>2</u>														

APTITUDES AND CAPACITIES

Architectural and Engineering Technologists and Technicians require:

- learning ability and the intellectual capacity to understand and apply architectural or engineering principles and methods to research, design development, production, or laboratory activities;
- verbal ability to comprehend scientific and technical terminology, and to communicate effectively, both orally and in writing, when conversing with architects or engineers, or preparing reports;
- numerical ability to quickly and accurately make arithmetic, algebraic, geometric or trigonometric computations for the solution of architectural or engineering problems;
- spatial perception to interpret or prepare architectural or engineering drawings and visualize arrangement and relationship of parts and sub-assemblies;
- form perception to observe relevant detail and make visual comparisons when examining drawings, or analyzing and testing materials and products for adherence to specifications;

- capacity to reach and handle tools and materials when testing products, preparing scale drawings and fabricating components;
- capacity to hear sounds of varying intensity or pitch when using sound producing or recording equipment;
- visual acuity, depth perception and good field of vision when working with magnification devices and draughting or survey instruments;
- capacity to work under conditions where there is a risk of injury, or exposure to atmospheric conditions such as dust, gases, vapors, mists or liquids.

In addition, Technicians in B require:

- ability to move the fingers to manipulate small objects rapidly and accurately to adjust instruments and machines;
- manual dexterity to install and tighten various parts of machinery and other apparatus.

TRAINING AND ENTRY REQUIREMENTS

Architectural and Engineering Technologists and Technicians normally require:

Technologists

- secondary school graduation; and depending on the complexity of the occupation, either
- graduation from a community college program of two to three years in an architectural or engineering technology specialty; and

- two or more years of on-the-job experience;

OR

- four or more years of on-the-job experience supplemented by part-time studies in the architectural or engineering specialty.

Technicians

- the training and experience is similar to that for Technologists, but usually of a shorter duration.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Individuals with sufficient experience, leadership ability and supervisory potential may advance to the supervisor occupation 2160-110 SUPERVISOR, ARCHITECTURAL AND ENGINEERING TECHNOLOGISTS AND TECHNICIANS. Technicians in B may advance to technologist occupations within their specialization with additional training and experience.

Transfer

Transfers for workers in both clusters is limited and usually occurs between occupations within each cluster.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- activities that are non-social in nature, and are carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- evaluation of information through measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

GROUP 2169

OTHER OCCUPATIONS IN ARCHITECTURE AND ENGINEERING, N.E.C.

This group includes occupations, not elsewhere classified, concerned with planning aerial surveys, analyzing aerial photographs to prepare or revise maps and charts, and designing and lettering forms for commercial, industrial and government organizations.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
2169-110	PHOTOGRAMMETRIST (prof. & tech., n.e.c.)	<u>2</u>	3	<u>2</u>	<u>2</u>	<u>2</u>	3	4	4	4	4	3	L 47	B	5	7	791	0Y945
2169-114	AERIAL-PHOTOGRAPH ANALYST (prof. & tech., n.e.c.)	<u>2</u>	3	<u>2</u>	<u>2</u>	<u>2</u>	3	4	4	4	5	3	L 47	I	5	6	719	0Y9
2169-118	STEREOPLOTTER (prof. & tech., n.e.c.)	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	3	3	3	3	5	3	L 47	I	4	7	791	0Y9
2169-122	MOSAICER (prof. & tech., n.e.c.)	<u>3</u>	3	<u>2</u>	<u>2</u>	<u>2</u>	3	3	3	3	5	3	L 47	I	4	7	91	0Y
2169-126	DRAUGHTING CLERK, TRANSIT (clerical)	<u>3</u>	3	3	<u>3</u>	<u>2</u>	<u>3</u>	3	<u>3</u>	3	5	5	S 47	I	4	6	19	0Y
2169-130	FORMS-LAYOUT MAN (any ind.)	<u>3</u>	3	3	<u>2</u>	<u>2</u>	3	2	<u>3</u>	3	5	5	L 47	I	3	6	19	0Y

MATHEMATICIANS, STATISTICIANS AND ACTUARIES

WORK PERFORMED

This chapter includes occupations concerned with conducting research to increase the knowledge of the science of mathematics and with developing and applying mathematical techniques to solve problems in life, physical, social and actuarial sciences and engineering. Worker functions include: planning and coordinating mathematical, actuarial and statistical studies; and synthesizing and analyzing data collected to discover and develop concepts or interpretations based on these studies. Work activities include: conducting research in mathematical and statistical theory; developing statistical methodology, and insurance, annuity and pension programs; and conducting surveys to obtain statistical data.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2181-110	MATHEMATICIAN, RESEARCH (prof. & tech., n.e.c.)	6	8	2181-138	STATISTICIAN, BIOLOGICAL AND AGRICULTURAL SCIENCE (prof. & tech., n.e.c.)	5	8
2181-114	STATISTICIAN, MATHEMATICAL (prof. & tech., n.e.c.)	6	8	2181-142	STATISTICIAN, BUSINESS AND ECONOMICS (prof. & tech., n.e.c.)	5	8
2181-118	ACTUARY (insur. & real estate)	5	9	2181-146	STATISTICIAN, PHYSICAL SCIENCE AND ENGINEERING (prof. & tech., n.e.c.)	5	8
2181-122	OPERATIONS-RESEARCH ANALYST (prof. & tech., n.e.c.)	5	8	2181-150	STATISTICIAN, SOCIAL SCIENCE (prof. & tech., n.e.c.)	5	8
2181-126	DEMOGRAPHER (prof. & tech., n.e.c.)	5	8	2181-154	STATISTICIAN, VITAL (gov. serv.)	5	8
2181-130	MATHEMATICIAN, APPLIED (prof. & tech., n.e.c.)	5	8				
2181-134	STATISTICIAN, APPLIED (prof. & tech., n.e.c.)	5	8				

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>	3	<u>2</u>	4	4	4	5	5	S	I	6-5	9-8	78	0941
			<u>2</u>													
			<u>1</u>													

APTITUDES AND CAPACITIES

Mathematicians, Statisticians and Actuaries require:

- learning ability to understand, develop and apply mathematical and statistical methods, formulae, and relationships;
- verbal ability to understand and use the scientific terminology associated with mathematics, and to communicate research findings through reports, lectures, and publications;
- numerical ability to represent and relate abstract ideas and concepts numerically, and to understand and perform advanced mathematical and statistical calculations;
- spatial perception to comprehend and think visually in geometric forms, and to present data in the form of tables and graphs;
- clerical perception to perceive detail in numerical material, and to avoid errors in mathematical computations.

TRAINING AND ENTRY REQUIREMENTS

Mathematicians, Statisticians and Actuaries normally require:

- a bachelor's degree in science with a major in pure or applied mathematics, and additional courses in such disciplines as statistics, biology, agriculture, economics, chemistry, commerce or finance.

For higher level positions or basic research, a master's degree or doctorate may be required.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Mathematicians, Statisticians and Actuaries with the required ability and qualifications may advance to managerial occupations in Chapter 113/114, under Financial Management Occupations.

Transfer

Statisticians may transfer, within various specializations, because mathematics is fundamental in many fields, such as engineering, economics and science. Possibilities of transfer therefore exist to other specializations in these fields. Mathematicians, Statisticians and Actuaries, with the necessary qualifications, may transfer to teaching positions in community colleges or universities.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- activities of an abstract and creative nature.

Temperaments

- evaluating information against measurable or verifiable criteria;
- evaluating information against judgmental criteria as in collection, organization and interpretation of data;
- directing, controlling and planning the entire activities of others;
- a variety of duties often characterized by frequent change.

SYSTEMS ANALYSTS, COMPUTER PROGRAMMERS AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with planning, implementing and controlling electronic-data-processing services, and the programming of computer systems. Worker functions include: analyzing and compiling engineering, scientific and business data to determine computer programming requirements; coordinating and implementing electronic-data-processing services to improve the economy, efficiency and operation of an establishment; and writing programs in computer-process language for specific applications. Work activities include: studying computer systems; conferring with systems analysts or departmental representatives to resolve questions of intent, data input and retrieval; examining design data and drawings to determine intent of designer and visualize configuration of work piece; preparing data-flow charts and block diagrams of equipment layout; writing computer programs in symbolic form to produce information required; and marking code sheets to indicate relationship between code and program steps.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
2183-110	SYSTEMS ANALYST BUSINESS, ELECTRONIC DATA- PROCESSING (prof. & tech., n.e.c.)	5	8	2183-118	PROGRAMMER, BUSINESS (prof. & tech., n.e.c.)	5	7
2183-114	SYSTEMS ANALYST ENGINEERING-SCIENTIFIC, ELECTRONIC DATA- PROCESSING (prof. & tech., n.e.c.)	5	8	2183-122	PROGRAMMER, ENGINEERING AND SCIENTIFIC (prof. & tech., n.e.c.)	5	7

B

		GED	SVP
2183-126	TOOL PROGRAMMER, NUMERICAL CONTROL (any ind.)	4	8

C

		GED	SVP
2183-130	PROGRAMMER, DETAIL (prof. & tech., n.e.c.)	4	6

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u> <u>3</u>	3	<u>3</u>	4	4	4	5	4	S 567	I	5	8-7	798	9014	
											5	S 67				79	90	
B	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	3	<u>3</u>	4	4	4	5	5	S 467	I	4	8	97	90	
C	<u>3</u>	<u>3</u>	<u>3</u>	4	3	<u>2</u>	4	4	4	5	5	S 67	I	4	6	97	09	

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand the application, installation and operation of various electronic-data-processing systems and the ability to understand and apply the basic principles governing engineering, scientific and business practices, coupled with reasoning ability to solve problems concerning them, with ingenuity and resourcefulness;
- verbal ability to understand scientific and business terms and computer terminology, and to communicate clearly and efficiently with establishment officials;
- numerical ability to understand and apply advanced mathematical principles to scientific and business systems, and to write programs in computer language;
- spatial perception to comprehend forms in space, such as equipment lay-out and design configurations of computer systems;
- clerical ability to discern pertinent detail in written material to avoid errors in tabular material and mathematical computations;
- near visual acuity to see symbols and details on process-flow and other charts.

B

- learning ability to understand and design computer programs for automatic-tool machining;
- verbal ability to understand written instructions to ascertain complexity of machining required;

- numerical ability to understand and apply shop mathematics, such as is necessary to calculate radii of simple and complex curves;
- spacial perception to comprehend three-dimensional configuration of work piece from drawings;
- clerical ability to discern pertinent detail in written material to avoid errors in programming and mathematical computations;
- capacity to handle objects and materials and manipulate precision instruments;
- near visual acuity to distinguish characteristics of symbols and details on process-flow and other charts.

C

- learning ability to understand and apply the basic principles of computer programming and apply them to the preparation of computer programs;
- verbal ability to understand written instructions, computer terminology and prepare computer programs in a clear and concise manner which detail the various instructions in logically written sequence;
- numerical ability to understand basic mathematical principles governing various programs and apply them in analyzing results of programs;
- clerical ability to discern pertinent detail in written material to avoid errors in tabular material and mathematical computations;
- near visual acuity to see symbols and details on process-flow and other charts.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

Systems Analysts

- a bachelor's degree in mathematics, engineering or science; and
- up to four years of on-the-job training.

Programmers

- secondary school graduation with emphasis on mathematics and science; and
- up to four years of on-the-job training;

OR

- graduation from a course in computer programming at an institute of technology or community college; and

- two to three years of on-the-job training.

Tool Programmers, Numerical Control normally require:

- graduation from a course in computer programming at an institute of technology or community college;
- one to three years of experience in setting-up and operating machine tools; and
- one to two years of on-the-job training.

Programmers, Detail normally require:

- secondary school graduation with emphasis on science and mathematics; and
- one to two years of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Systems Analysts with several years experience in planning, organizing, directing and controlling the analyses of establishment operations may advance to 1149-134 MANAGER, METHODS AND PROCEDURES, or 1131-114 MANAGER, DATA PROCESSING AND SYSTEMS ANALYSIS. Programmers may advance to Systems Analysts, and Programmers, Detail may advance to other programming occupations in this chapter, provided they acquire the necessary experience and undertake additional studies prescribed by the organization for which they are employed.

Transfer

There is little provision for transfer within this chapter however, personnel in this chapter may transfer to teaching occupations in institutes of technology or community colleges.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following.

Interests

- activities of a scientific and technical nature;
- work that is basically nonsocial in nature and is carried on in relation to processes and techniques.

Temperaments

- the evaluation of information against sensory or judgmental criteria;
- the evaluation of information against measurable or verifiable criteria.

GROUP 2189

**OCCUPATIONS IN MATHEMATICS, STATISTICS, SYSTEMS ANALYSIS AND RELATED
FIELDS, N.E.C.**

This group includes occupations, not elsewhere classified, concerned with activities in the fields of mathematics, statistics and systems analysis, such as analyzing coding systems and performing technical duties in statistical programs.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
2189-110	CRYPTANALYST (gov. serv.)	<u>2</u>	<u>2</u>	<u>2</u>	3	<u>3</u>	<u>3</u>	4	4	4	5	4	S 57	I	5	7	67	90Y
2189-114	STATISTICAL TECHNICIAN (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>2</u>	3	3	<u>2</u>	<u>3</u>	4	4	5	4	S 47	I	4	7	17	09Y5

ECONOMISTS

WORK PERFORMED

This chapter includes occupations concerned with conducting research and developing and applying principles and theories of economics to formulate plans for the solution of economic problems arising from the production and distribution of goods and services. Worker functions include: synthesizing or analyzing economic and statistical data and developing interpretations or economic theories; and communicating with people to convey or exchange information. Work activities include: conducting research into the mathematical basis of the science of economics, developing models to illustrate and forecast economic behaviour and patterns; devising methods for collection and analysis of economic and statistical data, and compiling and interpreting such data; preparing reports, estimates and forecasts based on studies in economic fields and on analyzed and interpreted data; advising private industrial concerns or government agencies on economic questions in a specialized field such as finance, taxation, international trade, labour, agriculture or industrial production; and investigating present and potential markets for particular goods and services.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2311-110	SUPERVISOR, ECONOMIC RESEARCH (prof. & tech., n.e.c.)	6	8	2311-138	INTERNATIONAL-TRADE ECONOMIST (prof. & tech., n.e.c.)	6	8
2311-114	ECONOMIST, GENERAL (prof. & tech., n.e.c.)	6	8	2311-142	LABOUR ECONOMIST (prof. & tech., n.e.c.)	6	8
2311-118	AGRICULTURAL ECONOMIST (prof. & tech., n.e.c.)	6	8	2311-146	MATHEMATICAL ECONOMIST (prof. & tech., n.e.c.)	6	8
2311-122	DEVELOPMENT ECONOMIST (prof. & tech., n.e.c.)	6	8	2311-150	PRICE ECONOMIST (prof. & tech., n.e.c.)	6	8
2311-126	ECONOMETRICIAN (prof. & tech., n.e.c.)	6	8	2311-154	TAX ECONOMIST (prof. & tech., n.e.c.)	6	8
2311-130	FINANCIAL ECONOMIST (prof. & tech., n.e.c.)	6	8	2311-158	MARKET-RESEARCH ANALYST (prof. & tech., n.e.c.)	6	7
2311-134	INDUSTRIAL ECONOMIST (prof. & tech., n.e.c.)	6	8				

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	<u>1</u>	4	4	<u>2</u>	4	4	4	5	5		S 7	I	6	8	768	90Y4

APTITUDES AND CAPACITIES

Economists require:

- learning ability to acquire, understand and apply the principles and theories of economics and reasoning ability to make judgments in the collection, interpretation and application of economic data;
- verbal ability to understand the meanings of words and ideas associated with them, to express ideas clearly, and to communicate effectively with others;

- numerical ability to make statistical computations quickly and accurately;
- clerical perception to perceive pertinent detail in written or tabular material;
- near-visual acuity to constantly work with numbers and various tabular materials.

TRAINING AND ENTRY REQUIREMENTS

Economists normally require:

- an honours degree in economics;

OR

- university graduation in another discipline with acceptable courses; and

- several years of on-the-job experience in the field of economics.

A master's or doctor's degree is required for teaching positions in universities and for specialized research studies.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement to more senior positions depends on experience, development of supervisory or managerial abilities, and specialization in one or several areas of knowledge.

Transfer

Transfer possibilities are normally limited to movement within the field of the specialization. Transfers, however, do occur between positions in private industry and positions in the federal and provincial governments. Some economists may transfer to lecturing and/or research positions in universities, provided they possess the necessary qualifications.

CLUES FOR RELATING APPLICANTS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to economist occupations require significant interests in and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature such as conducting research in economic theory and its applications;
- dealing with people and the communication of ideas;
- activities of an abstract and creative nature such as devising methods for the collection and analysis of economic and statistical data.

Temperaments

- the evaluation of information against sensory or judgmental criteria as in developing appropriate research methods for the collection and analysis of data, preparing estimates and forecasts, advising on economic questions, and presenting theories or plans for the solution of economic problems;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards of accuracy when compiling and analyzing economic and statistical data;
- the direction, control, and planning of an entire activity, as in developing and conducting research programs, analyzing and interpreting resulting data to formulate estimates, forecasts, or plans for the solution of economic problems.

SOCIOLOGISTS, ANTHROPOLOGISTS AND RELATED SOCIAL SCIENTISTS

WORK PERFORMED

This chapter includes occupations concerned with studying the origin, development and functioning of human societies and cultures, man's evolution and social patterns, and interrelationships of families and groups of people. Worker functions include: synthesizing and analyzing data relating to the origin, development, evolution, way of life and social relationships of groups of human beings; and communicating with people to convey or exchange information. Work activities include: making comparative studies of societies and cultures; reconstructing records of extinct cultures; investigating social phenomena; and preparing reports and making recommendations.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2313-110	ANTHROPOLOGIST (prof. & tech., n.e.c.)	6	8	2313-114	SOCIOLOGIST (prof. & tech., n.e.c.)	6	8

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	3	<u>2</u>	<u>2</u>	3	4	4	4	5	4		L 56	I	6	8	7684	90571
			4	4						5							

APTITUDES AND CAPACITIES

Anthropologists and Sociologists require:

- learning ability to understand, acquire and apply the principles, theories and methods of study in the fields of sociology and anthropology;
- verbal ability to understand and use terminology associated with the fields of sociology, and to communicate ideas effectively through such means as reports, lectures and publications.

Additionally, for Anthropologists:

- spatial perception to visualize past human activities by studying the physical arrangement of material remains, obtained from archeological excavations;
- form perception to examine the archeological remains, human biology and cultural artifacts of human cultures.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- a master's degree in sociology or anthropology; or

- for teaching in universities, or for advanced research, specialization in one or more areas leading to a doctoral degree.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for Sociologists and Anthropologists associated with universities in research or teaching positions is to the professor level, or to such occupations as 2711-110 DEPARTMENT CHAIRMAN, COLLEGE OR UNIVERSITY, 1132-110 DIRECTOR, MUSEUM or 2350-110 CURATOR, MUSEUM.

Transfer

Transfer for Sociologists and Anthropologists may be to other fields, such as education, public service, private industry, welfare or non-profit services; for example, 2711-146 UNIVERSITY TEACHER, SOCIAL SCIENCES AND 2353-130 CATALOGUER, MUSEUM. Transfer to other specializations within the disciplines is possible with some further academic training.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- scientific and technical work;
- dealing with people and communicating ideas;
- abstract and creative work or experiences;
- additionally, for sociologists, working for people for their presumed good, as in directing research into the causes and methods of preventing crime.

Temperaments

- the evaluation of information against sensory or judgmental criteria;
- the evaluation of information against measurable or verifiable criteria;
- dealing with people in actual job duties beyond giving and receiving instructions;
- a variety of duties often characterized by frequent change;
- additionally, for sociologists, influencing people in their opinions, attitudes, or judgments about ideas or things.

PSYCHOLOGISTS

WORK PERFORMED

This chapter includes occupations concerned with collecting, interpreting and applying scientific data relating to human behaviour and mental processes. Worker functions include: synthesizing or analyzing data collected through experimentation, testing and observation; determining courses of action to be taken on the basis of analysis of data; mentoring; and communicating with people to convey or exchange information. Work activities include: planning and carrying out experiments and observations on human beings and animals; investigating problems regarding individual development, human inter-relationships, and the processes of learning and teaching; conducting research, and developing psychological principles and techniques; developing methods for use in psychological research, and developing testing material and establishing norms; investigating methods of programming psychological information for electronic-data processing; diagnosing mental disorders of individuals and the needs of children in educational systems; providing individual and group guidance and counselling services, and carrying out corrective programs; applying psychological principles and techniques to personnel management, marketing, and industrial design; and administering psychological tests and interpreting results.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2315-110	PSYCHOLOGIST, GENERAL (prof. & tech., n.e.c.)	6	8	2315-130	PSYCHOLOGIST, SOCIAL (prof. & tech., n.e.c.)	6	8
2315-114	PSYCHOLOGIST, EXPERIMENTAL (prof. & tech., n.e.c.)	6	8	2315-134	PSYCHOLOGIST, CLINICAL (prof. & tech., n.e.c.)	6	8
2315-118	PSYCHOLOGIST, DEVELOPMENTAL (prof. & tech., n.e.c.)	6	8	2315-138	PSYCHOLOGIST, COUNSELLING (prof. & tech., n.e.c.)	6	8
2315-122	PSYCHOLOGIST, EDUCATIONAL (prof. & tech., n.e.c.)	6	8	2315-142	PSYCHOLOGIST, INDUSTRIAL (prof. & tech., n.e.c.)	6	8
2315-126	PSYCHOLOGIST, ENGINEERING (prof. & tech., n.e.c.)	6	8	2315-146	PSYCHOLOGIST, SCHOOL (prof. & tech., n.e.c.)	6	8
				2315-150	PSYCHOMETRIST (prof. & tech., n.e.c.)	5	7

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	<u>1</u>	4	4	<u>3</u>	4	4	4	5	4		S 567	I	6-5	8-7	6874	05947
		<u>2</u>	<u>3</u>														

APTITUDES AND CAPACITIES

Psychologists require:

- ability to learn, understand and apply the basic theories, principles and methods of the field of psychology, and to make judgments necessary in collecting, interpreting and applying scientific data;
- verbal ability to understand scientific material and ideas, to communicate ideas clearly, and to interact effectively with people at all levels;
- numerical ability to make statistical computations quickly and accurately;
- clerical perception to recognize pertinent details in written or tabular material, such as scientific literature, research results and psychological testing data, and to avoid errors in statistical computations.

TRAINING AND ENTRY REQUIREMENTS

Psychologists normally require:

- a master's or doctoral degree in psychology, depending on the province;

- in most provinces and territories, a certificate of registration in order to engage in private practice, or use the title 'psychologist'; and in provinces without a registration program, membership in the national or a provincial association for identification as a psychologist.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be from a position as a member of a group of psychologists working together in an establishment to a position of increased remuneration and administrative responsibility as group leader, chief, or director of a program in government, private industry or education.

Transfer

Psychologists may be engaged in applied psychology or in academic or research activities, either in private practice or in a university, school, hospital governmental, industrial or commercial setting. Transfer possibilities, however, are normally limited to positions within the same field of specialization.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of psychologist require significant interests in, and dispositions for work involving the following:

Interests

- dealing with people and the communication of ideas;
- activities of an abstract and creative nature, such as devising plans for research projects, or developing new theories or new applications of existing themes and principles;
- activities of a scientific and technical nature;
- working for people for their presumed good as in the social service sense;
- work resulting in prestige or the esteem of others.

Temperaments

- the evaluation of information against measurable or verifiable criteria such as statistical data;
- dealing with people in actual job duties, beyond giving and receiving instructions, as in a counselling or clinical situation;
- the evaluation of information against sensory or judgmental criteria;
- the direction, control, and planning of an entire activity;
- influencing people in their opinions, attitudes or judgments about ideas or things, such as counselling individuals or giving advice.

OTHER REQUIREMENTS

- objectivity and, when working with people, respect for their personal feelings and viewpoints.

OCCUPATIONS IN SOCIAL SCIENCES, N.E.C.

This group includes occupations, not elsewhere classified, concerned with human society, its social and political institutions, and its environment.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
2319-110	GEOGRAPHER (prof. & tech., n.e.c.)	<u>1</u>	<u>1</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>3</u>	4	4	4	5	3	L 567	I	6	8	768	490I
2319-114	HISTORIAN (prof. & tech., n.e.c.)	<u>1</u>	<u>1</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 567	I	6	8	768	490I
2319-118	PHILOLOGIST (prof. & tech., n.e.c.)	<u>1</u>	<u>1</u>	4	3	<u>3</u>	<u>3</u>	4	4	4	5	4	S 567	I	6	8	678	90Y
2319-122	POLITICAL SCIENTIST (prof. & tech., n.e.c.)	<u>1</u>	<u>1</u>	3	4	4	3	4	4	4	5	5	S 567	I	6	8	768	490I
2319-126	HOME ECONOMIST (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>2</u>	3	3	<u>3</u>	3	3	3	5	3	L 4567	I	5	8	768	90Y5
2319-130	COMMUNITY PLANNER (gov. serv.; prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	<u>2</u>	<u>3</u>	3	<u>3</u>	4	4	4	5	5	L 567	I	5	8	682	459Y
2319-134	HOME ECONOMICS TECHNOLOGIST (prof. & tech., n.e.c.)	<u>2</u>	<u>3</u>	<u>3</u>	3	3	3	3	4	3	5	3	L 4567	I	5	7	762	9057Y

SOCIAL WORKERS

WORK PERFORMED

This chapter includes occupations concerned with diagnosing and treating social problems that affect individuals and communities, using a knowledge of human behaviour and of available community resources. Worker functions include: determining appropriate courses of action to be taken on the basis of analyses of case studies; counselling or guiding individuals or families to resolve their personal or social problems; negotiating with other community agencies and groups concerned with social problems to arrive jointly at decisions, conclusions, or solutions. Work activities include: interviewing clients to determine and evaluate the nature, extent and causes of the problem; referring clients to community agencies and other organizations if required, and arranging for provision of appropriate assistance; following clients' progress; compiling case records; and preparing reports.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2331-110	SOCIAL-SERVICES SUPERVISOR (social wel.)	5	8	2331-122	PROBATION OFFICER (gov. serv.)	5	7
2331-114	COMMUNITY-ORGANIZATION WORKER (social wel.)	5	8	2331-126	SOCIAL WORKER, CASE WORK (social wel.)	5	7
2331-118	PAROLE OFFICER (gov. serv.)	5	7	2331-130	SOCIAL WORKER, GROUP (social wel.)	5	7

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	3	4	4	<u>3</u>	4	4	4	5	5		S 56	I	5	8-7	462	5974
<u>2</u>	<u>2</u>				<u>2</u>												

APTITUDES AND CAPACITIES

Social Workers require:

- intellectual capacity to make judgments based on an understanding of human nature and analyses of social problems, to interpret and apply existing welfare services according to the needs of the client, and to acquire a knowledge of, and apply the techniques of rehabilitation.

- verbal ability to communicate effectively with people at all levels, both in a counselling situation and in contacts with fellow social workers or community members;
- clerical perception to note pertinent detail in case records, to maintain case files, and to prepare budgets and reports.

TRAINING AND ENTRY REQUIREMENTS

Social Workers generally require:

- a bachelor of arts degree with such courses as sociology, psychology, political science, and economics; and
- two years of graduate study at a school of social work leading to a master's degree in social work;

OR

- a bachelor's degree in social work; and
- a one-year graduate study program at a school of social work leading to a master's degree in social work.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Social Workers may teach in university schools of social work or provide consultative, advisory, or administrative services to governmental bodies or private agencies. They may be on the staff of juvenile or family courts, schools, hospitals, clinics or other helping institutions.

Advancement

Advancement to senior supervisory or administrative positions is based on additional academic qualifications, experience and demonstrated ability.

Transfer

Transfer may take place from one agency to another, or from governmental to private agencies.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupations of social workers require significant interests in, and dispositions for work involving the following:

Interests

- working with people for their presumed good, as in the social service sense;
- dealing with people and the communication of ideas.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria;
- influencing people in their opinions, attitudes or judgments about ideas or things;
- the direction, control and planning of an entire activity or the activities of others.

OTHER REQUIREMENTS

- good health, emotional stability and stamina to understand trying and emotionally-exhausting work;
- tolerance and respect for individuals from all walks of life;
- personal integrity.

OCCUPATIONS IN COMMUNITY RECREATIONAL SERVICES

WORK PERFORMED

This chapter includes occupations concerned with organizing and supervising social, recreational and cultural activities such as those in camps, community centres and playgrounds. Worker functions include: examining and evaluating data relevant to community resources and requirements; determining action to be taken on the basis of analyses of data; training staff, instructing participants in recreational programs such as in arts and crafts, sports or games; and supervising paid or volunteer workers. Work activities include: studying recreational needs of a community, and planning, organizing and conducting recreational activities to meet these needs; and performing administrative duties necessary for the operation of recreational centres, playgrounds or camps.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
2333-110	RECREATION DIRECTOR (social wel.)	5	7	2333-114	CAMP DIRECTOR (social wel.)	4	7

B

		GED	SVP			GED	SVP
2333-122	RECREATION LEADER (social wel.)	4	6	2333-126	CAMP COUNSELLOR (social wel.)	4	4

N.B. Occupation 2333-118 SOCIAL-SERVICES ASSISTANT (social wel.) is listed for Volume II purposes in CHAPTER 2333B, SOCIAL-SERVICES ASSISTANTS.

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	<u>2</u>	<u>3</u>	4	4	4	4	4	4	5	5	S 56	I	5-4	7	462	4591	
	<u>3</u>	<u>3</u>																
B	<u>3</u>	<u>3</u>	4	4	3	4	3	3	3	<u>4</u>	4	S 4567	I-O	4	6-4	46	514	
					4			4										

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the social and recreational needs of the community and the role of community services in fulfilling these needs;
- verbal ability to communicate effectively with staff and volunteer members.

Additionally, for Cluster A:

- numerical ability to analyze welfare and community needs and resources, to ascertain and evaluate financial implications, and prepare budgets.

Additionally, for Cluster B:

- eye-hand co-ordination, manual dexterity, and eye-hand-foot co-ordination to demonstrate techniques of sports, dances, games or handicrafts.

TRAINING AND ENTRY REQUIREMENTS

Recreation Directors and Camp Directors normally require:

- a bachelor's degree in recreation, recreational administration or a social science; and
- several years of experience in the field of recreation.

Recreation Leaders normally require:

- a diploma from a two-year community college course in recreational leadership.

A Camp Counsellor is usually a high school or university student, often with some camping or related recreational experience; or an adult, frequently a teacher, interested in camp counselling, with specialized competence in camp lore and skills.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Persons in the field of recreation may advance ultimately to positions as Recreation Directors in charge of the administration of a total community, city or area program, or of a large organization or agency, provided they have obtained the necessary qualifications.

Transfer

Transfer may take place between positions having similar requirements in federal, provincial or municipal government, or private organizations, such as industrial establishments, voluntary agencies, recreation centres, penal institutions, children's homes, hospitals, playgrounds, recreation enterprises and educational institutions.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- working for people for their presumed good as in the social welfare sense;
- dealing with people and the communication of ideas.

Additionally, for Cluster A:

- business contact with people.

Temperaments

- the direction, control, and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- a variety of duties often characterized by frequent change;

Additionally, for Cluster A:

- the evaluation of information against sensory or judgmental criteria as in selection of appropriate program activities.

OTHER CLUES AND REQUIREMENTS

Other Clues

- participation during high school and university years in extra-curricular activities, such as dramatics, crafts and sports;
- part-time or summer work as playground leader, coach, referee, or as swimming instructor.

Other Requirements

- ability to work with people of all ages, beliefs, ethnic origins and levels of skill;
- leadership qualities and organizational ability to ensure an effective administration;
- initiative and enthusiasm to develop programs of recreational activities which will attract the interest of members of the community and satisfy their needs;
- emotional stability and maturity.

SOCIAL-SERVICES ASSISTANTS

WORK PERFORMED

This chapter includes occupations concerned with assisting professional social workers in providing social services to individuals and family groups. Worker functions include: compiling information to prepare case records for the use of the social worker; and speaking to clients to provide information. Work activities include: answering routine inquiries, maintaining case files; accompanying clients to homes, courts, clinics or elsewhere; and performing related duties.

LIST OF OCCUPATIONAL TITLES

		GED	SVP
2333-118	SOCIAL-SERVICES ASSISTANT (social wel.)	4	6

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	4	5	5		S 56	I	4	6	46	51

APTITUDES AND CAPACITIES

Social-Services Assistants require:

- learning ability to understand the nature and extent of services provided by professional case workers, and to carry out established procedures;

- verbal ability to communicate effectively with clients and professional case workers;
- clerical perception to prepare correspondence or reports, and to maintain case files.

TRAINING AND ENTRY REQUIREMENTS

Social-Services Assistants normally require:

- a two-year certificate course in social services at a community college.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement possibilities are limited unless further education and training are acquired.

Transfer

Transfer opportunities exist to child-care centres, correctional or rehabilitative services, institutes for the mentally or physically handicapped, welfare departments, and community development organizations.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Social-Services Assistants require significant interests in, and dispositions for work involving the following:

Interests

- working for people for their presumed good, as in the social welfare sense;
- dealing with people and the communication of ideas.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions, such as easing the anxiety of clients by accompanying them to homes, courts or clinics;
- a variety of duties often characterized by frequent change.

OCCUPATIONS IN SOCIAL WORK AND RELATED FIELDS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities in social work and related fields, such as research into social welfare problems, planning student activities, and assisting people to improve their living standards.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
2339-110	RESEARCH OFFICER, SOCIAL WELFARE (social wel.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	3	4	4	4	5	5	S 56	I	5	8	76	9054
2339-114	STUDENT-ACTIVITIES ADVISER (social wel.)	<u>2</u>	<u>3</u>	3	4	4	4	4	4	4	5	5	S 56	I	5	6	46	459

JUDGES AND MAGISTRATES

WORK PERFORMED

This chapter includes occupations concerned with presiding over judicial proceedings and pronouncing judgments in courts of law. Worker functions include: analyzing and evaluating evidence to render decisions according to law; counselling individuals on their legal rights, and juries on the law applicable to the case being heard; and co-ordinating time, place and sequence of events to be followed. Worker activities include: ruling on the conduct of cases in court; admitting or rejecting evidence presented; determining rights and obligations of parties involved in litigation; and passing sentence in accordance with the law.

LIST OF OCCUPATIONAL TITLES

GED SVP

2341-110 JUDGE (gov. serv.)

6 9

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	3	4	3	<u>3</u>	4	4	4	5	5		S 56	I	6	9	465	59X04

APTITUDES AND CAPACITIES

Judges and Magistrates require:

- learning ability to thoroughly understand and apply the principles of civil, criminal, admiralty, corporation and other law, and capacity to reason analytically when relating knowledge to legal problems;

- verbal ability to understand and use legal terminology, and to communicate effectively with people at all levels;
- clerical perception to examine and prepare legal documents;
- ability to hear, especially in a court room which may be subject to distracting noise, poor acoustics and intermittent interruptions.

TRAINING AND ENTRY REQUIREMENTS

Judges require:

- a bachelor's degree in law;
- from six to twelve months of articleship with an established lawyer;
- successful completion of bar admission examinations; and
- approximately ten years of experience as a practising lawyer.

The appointment of Judges is the exclusive right of the Governor-General in Council, under the terms of the British North America Act, for the Supreme Court of Canada, the Exchequer Court and other Miscellaneous Courts under Federal jurisdiction as well as Provincial Superior, District and County Courts.

Magistrates require:

- over ten years of experience as a responsible member of the business community, or activities in social and welfare agencies, religious, civic, community or other affairs.

The appointment of Magistrates - now referred to in some provinces as Provincial Judges - is the exclusive right of the Lieutenant-Governor in Council under the terms of the British North America Act, and they have limited jurisdiction as set out in the various governing statutes of the Provinces.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Judges and Magistrates may be appointed to Higher Courts if so recommended by the competent authority under the terms of the British North America Act.

Transfer

There are no transfers to other occupations as judges and magistrates are appointed for life, or until they reach the statutory retirement age. Judges may resign from the bench but before they resume the practise of law they must meet certain restrictions imposed upon them by legislation.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Judges and Magistrates require significant interests in, and dispositions for work involving the following:

Interests

- working for people for their presumed good as in the social welfare sense;
- dealing with people and the communication of ideas;
- work resulting in the prestige or esteem of others.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- evaluating information against sensory or judgmental criteria by studying statutes, previous decisions, precedents and regulations and offering an oral or written judgment based on these deliberations;
- interpretation of feelings, ideas or facts in terms of personal viewpoint;
- evaluation of information against measurable or verifiable criteria;
- the direction, control and planning of an entire activity or the activities of others.

OTHER REQUIREMENTS

- integrity and impartiality;
- tolerance;
- capacity for ready and accurate recall, both of details of cases and applicable laws and precedents;
- a penchant for complex, detailed work.

LAWYERS AND NOTARIES

WORK PERFORMED

This chapter includes occupations concerned with pleading cases or conducting prosecutions in courts of law, providing advice on legal rights and obligations, and drawing up and certifying legal documents. Worker functions include: co-ordinating, analyzing and compiling information for the defence or prosecution case in a trial or hearing, or the preparation of legal documents; counselling individuals or groups concerning their rights, obligations or other legal matters; pleading or prosecuting cases in court; and negotiating contracts, purchase and sale of property and arrangement of mortgage loans. Work activities include: examining circumstances and determining applicable law by studying codes, statutes, previous decisions and established regulations; representing clients in non-contentious proceedings; drawing up mortgages, deeds, wills and other legal papers; arranging probates and administering estates of deceased persons; and taking affidavits and administering oaths.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
2343-110	LAWYER (prof. & tech., n.e.c.)	6	8	2343-114	NOTARY, QUEBEC (prof. & tech., n.e.c.)	6	8

B

		GED	SVP
2343-118	NOTARY PUBLIC, BRITISH COLUMBIA (bus. serv.)	5	6

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>1</u>	<u>1</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 567	I	6	8	685	945701
B	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 567	I	5	6	26	0Y5

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply the principles of law, and capacity to reason analytically when relating knowledge to legal problems;
- verbal ability to understand and use legal and technical terminology, and to communicate persuasively and effectively with clients, members of a court and others of various social, cultural and educational backgrounds.

B

- learning ability to understand and apply the principles of civil law as it pertains to the notarizing of legal documents, preparation of real and personal property agreements and the drawing up of legal contracts;
- verbal ability to understand and use legal and technical terminology, and to communicate effectively with clients.

Workers in this chapter also require:

- clerical perception to review pertinent details and to avoid errors in legal documents.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

Lawyers:

- a bachelor's degree in law;

- six to eighteen months as an articled clerk or student-at-law to an established lawyer; and
- membership in a provincial Bar Association obtained by passing examinations set by the association.

Notaries, Quebec:

- a degree in law, common law section, from a recognized university, including notarial practice; and
- pass examinations as determined by the Board of Notaries of the Province of Quebec leading to registration as a member.

B**Notaries Public, British Columbia:**

- secondary school graduation;
- one to three years of experience as a real estate agent, insurance agent or law clerk;
- completion of a program of part-time studies in business law, real and personal property, agreements and contracts, wills and trusts and federal and provincial statutes; and
- pass specified examinations.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Workers in Cluster A may advance to senior positions in government departments or in the private sector. Some may become partners in law firms or establish their own practice. With appropriate qualifications, some may be appointed judges or magistrates.

Notaries Public, British Columbia may advance to some occupations in Chapter 2349, **OCCUPATIONS IN LAW AND JURISPRUDENCE**, N.E.C., provided they acquire the necessary training and experience.

Transfer

Workers in Cluster A may transfer to positions in government, commerce or industry requiring a legal background.

Notaries Public, British Columbia may transfer to sales or contract administration in such fields as real estate and insurance.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A**Interests**

- dealing with people and the communication of ideas;
- abstract and creative work or experience;
- work resulting in the prestige or esteem of others by advising corporations, acting as an agent of a corporation, and serving as an arbiter in business controversies involving points of law.

Temperaments

- evaluation of information against sensory or judgmental criteria by counselling clients as to the advisability of prosecuting or defending a law suit, or their legal rights and obligations in other matters;
- direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- influencing people in their opinions, attitudes or judgments about ideas or things;
- evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change.

B**Interests**

- business contacts with people;
- dealing with people and the communication of ideas.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- dealing with people in actual job duties beyond giving and receiving instructions.

OTHER REQUIREMENTS

- capacity for ready and accurate recall, both of details of cases and applicable laws and precedents;
- a penchant for complex, detailed work.

GROUP 2349

OCCUPATIONS IN LAW AND JURISPRUDENCE, N.E.C.

This group includes occupations, not elsewhere classified, concerned with the application of principles related to common law, and to statute and civil law and its administration.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
2349-100	PATENT AGENT (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 567	I	5	8	62	9051
2349-114	LAW CLERK (prof. & tech., n.e.c.)	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 7	I	5	7	6	90Y
2349-118	CONTRACT CLERK (bus. serv.)	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 7	I	5	7	6	90Y
2349-122	LAND TITLES CLERK (clerical)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 567	I	5	6	62	90Y51
2349-126	TITLE EXAMINER (bus. serv.)	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 57	I	5	6	6	90Y
2349-130	ESCROW OFFICER (bus. serv.)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5	S 57	I	4	6	6	0Y
2349-134	COURTROOM OFFICER (gov. serv.)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	3	4	3	5	5	L 4567	I	4	5	62	5Y
2349-138	SHERIFF, DEPUTY (gov. serv.)	<u>3</u>	<u>3</u>	4	4	4	4	4	4	4	5	5	M 4	B 6	3	4	62	5Y

SUPERVISORS: OCCUPATIONS IN LIBRARY, MUSEUM AND ARCHIVAL SCIENCES

This group includes occupations concerned with supervising and co-ordinating activities of workers in museums and libraries engaged in research, educational and cultural programs, arranging exhibits, restoring artifacts, and cataloguing and selecting library materials.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
2350-110	CURATOR, MUSEUM (educ.)	<u>1</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>2</u>	4	4	4	4	5	4	S	I	6	8	6257	4590I
2350-114	CHIEF-DISPLAY OFFICER, MUSEUM (educ.)	<u>2</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	4	4	4	4	4	L	I	5	8	652	4509
2350-118	SUPERVISING LIBRARIAN, TECHNICAL SERVICES (educ.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 567	I	5	7	65	4509Y
2350-122	TECHNICAL OFFICER, MUSEUM (educ.)	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	4	4	4	5	4	L	I	4	8	965	4509Y

LIBRARIANS AND ARCHIVISTS

WORK PERFORMED

This chapter includes occupations concerned with organizing, developing and maintaining systematic collections of books, audio-visual material, historically valuable documents and other recorded material, and making them available to users. Worker functions include: co-ordinating library services, and appraising and classifying library and archival material. Work activities include: acquiring, cataloguing, indexing, issuing, receiving and accounting for library and archival material; and assisting clientele in using library facilities.

LISTS OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2351-110	REFERENCE LIBRARIAN (educ.)	6	7	2351-122	BIBLIOGRAPHER (educ.)	5	7
2351-114	LIBRARIAN (educ.)	5	7	2351-126	CATALOGUER (educ.)	5	7
2351-118	SPECIAL LIBRARIAN (educ.)	5	7	2351-146	ARCHIVIST (educ.)	5	7

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
2	2	3	3	4	2	3	4	4	5	4	S-L 4567	I	6-5	7	162	09541
			4	2						5						

APTITUDES AND CAPACITIES

Librarians and Archivists require:

- learning ability to plan, develop and execute library, archival and related services and computer-oriented data storage and retrieval systems, and to understand and apply library classification systems;
- verbal ability to confer with people at all levels of education and training, to analyze publishers' catalogues, to compile information and prepare written summaries, and to understand patrons' questions, communicate clearly and aid them with information for their research programs;
- form perception, as applicable to archivists, to notice pertinent detail in pictures, maps and other objects, to make visual discriminations

- and observe slight differences in quality, texture, shadings and other characteristics to determine value and authenticity;
- clerical perception to consult references and identify subject matter, to verify information and record data, and to maintain collections, files, catalogues and indices;
- capability to perform sedentary to light work with considerable reaching and stooping for material on shelves as well as handling and fingering books, index cards, files, audio-visual and other material;
- near visual acuity required when checking detail, recording information, and filing material.

TRAINING AND ENTRY REQUIREMENTS

Librarians normally require:

- a three or four year course of studies in a university leading to a bachelor of arts degree or other acceptable degree; and
- one or two years program in a university school of library science leading to a bachelor's or master's degree — B.L.S. or M.L.S.

Archivists normally require:

- a bachelor's degree in Honours History, but most employers prefer a master's degree; and
- a one-year period of on-the-job training.

The Canadian Historical Society sponsors summer courses in archival administration of approximately one month's duration, and awards a certificate upon completion of this course.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be to that of 2350-118 SUPERVISING LIBRARIAN, TECHNICAL SERVICES or to 1132-114 DIRECTOR, LIBRARY. In libraries where a grading system is in effect, advancement may be from lower to higher grades.

Transfers

Transfers are usually between occupations in this group or between libraries or archives. For example, a bibliographer may transfer to a cataloguer, or a librarian to a special librarian, or reference librarian. Libraries vary according to type; some are general in nature while others are specialized according to the needs of an establishment; therefore, transfer of workers between libraries is common. Because of their general knowledge and familiarity with a wide variety of topics, transfers to writing or teaching occupations are also possible, provided that certification is acquired.

Archivists, sometimes referred to as Historical Records Officers, may be classified according to levels within their occupation, and thus can advance within these levels to supervisory positions.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations of librarians and archivists require significant interests in, and dispositions for work involving the following:

Interests

- situations involving dealing with things, such as books, documents and other recorded material;
- dealing with people to assist them in obtaining information required for research problems;
- contacts with people to provide them with information.

Temperaments

- evaluating information against measurable or verifiable criteria, as in appraising authenticity of original documents, allocating relevant materials, and verifying and revising library data;
- evaluation of information against sensory or judgmental criteria as in judging procedures, interpreting policy, interpreting requests of library users, and in evaluating material and deciding on its need in a library or archive;
- planning, organizing and controlling a library or archival program;
- dealing with staff in a supervisory role;
- a variety of duties characterized by frequent change.

TECHNICIANS IN LIBRARY, MUSEUM AND ARCHIVAL SCIENCES

WORK PERFORMED

This chapter includes occupations concerned with restoring paintings, documents, artifacts and equipment, taxidermy, and assisting in maintaining a collection of library material. Worker functions include; working skilfully with precision to restore items as close as possible to their original state; analyzing data obtained by detailed examination of paintings, documents, artifacts, fossils and machines to determine restoration techniques to be employed; compiling information on specimens, documents and books to assist in developing, organizing and maintaining records and catalogues; giving assignments and directions to assistants in classifying and cataloguing collections. Work activities include: determining age and nature of paintings and documents; removing accretions and stains from paintings and documents using various techniques; remounting paintings and restoring damaged sections; preparing and mounting animal specimens for display purposes; constructing skeletal mounts and repairing damaged artifacts; dismantling, restoring, replacing and reassembling machine parts on antique machinery and equipment; arranging paintings, documents, specimens and artifacts for cataloguing; and maintaining collections of library material.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
2353-110	PAINTINGS RESTORER (educ.)	4	8	2353-122	ARTIFACT AND FOSSIL RESTORER (educ.)	4	6
2353-114	DOCUMENT RESTORER (educ.)	4	7				
2353-118	TAXIDERMIST (educ.; misc. serv.)	4	7	2353-126	EQUIPMENT RESTORER (educ.)	4	6

B

		GED	SVP			GED	SVP
2353-130	CATALOGUER, MUSEUM (educ.)	4	6	2353-134	LIBRARY TECHNICAL ASSISTANT (educ.)	4	6

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	3	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>2</u>	3	5	<u>3</u>	L 347	I 567	4	8-6	90	09Y1
	<u>2</u>		4	3	<u>3</u>		<u>2</u>	<u>3</u>		4	4						
											<u>1</u>						
B	<u>3</u>	<u>3</u>	4	3	4	<u>2</u>	4	4	4	4	4	L 47	I 7	4	6	16	09Y1

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply scientific or technical principles and methods for the restoration or preservation of items such as, documents, artifacts, paintings, or a variety of display equipment, depending upon the occupation;
- spatial perception to visualize how skeletal or mechanical parts fit together and how finished product will look;
- form perception to detect pertinent detail, such as disfiguration or other flaws in paintings, or wear and corrosion to artifacts or equipment parts;

- eye-hand-finger co-ordination and finger dexterity when repairing paintings, artifacts or equipment, using oils, paints and brushes, or when fitting objects together using hand tools;
- colour discrimination to combine paints and oils to develop colours which accurately match the original painting, or to detect discolouration caused by aging;
- ability to stoop, kneel or crouch when placing artifacts, paintings and art objects on exhibit;
- near visual acuity and depth perception to restore paintings and other artifacts;
- capacity to adapt to conditions where there are possible mechanical

hazards from equipment, or from odours, fumes, dust, liquids and poor ventilation;

- capacity to work in presence of noise from machinery in the case of 2353-126 EQUIPMENT RESTORER.

B

- learning ability to understand and apply the principles and methods of cataloguing and classifying books, documents and artifacts;
- verbal ability to understand and use technical language associated

with cataloguing and library science, and express ideas clearly in written or oral form;

- clerical perception to note differences in copy and avoid perceptual errors in lists when working in a library, or in a cataloguing department of a museum;
- near visual acuity, and the ability to distinguish colours;
- capacity to adapt to conditions where there are possible hazards from dusts and poor ventilation.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter require:

A

- completion of a two or three-year program in a community college or an institute of technology in graphic arts, natural sciences, or interior design, depending upon the occupation;
- for some occupations, such as 2353-110 PAINTINGS RESTORER

and 2353-118 TAXIDERMIST, up to ten years of on-the-job training and experience is required in addition to formal training in chemistry, or basic animal anatomy.

B

- completion of a one or two-year course in library science at a community college.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for individuals with supervisory and leadership abilities and sufficient experience may be to 2350-114 CHIEF-DISPLAY OFFICER, MUSEUM or to 2350-122 TECHNICAL OFFICER, MUSEUM.

Transfer

Transfers are limited due to the high degree of specialization and training required for these occupations.

CLUES FOR RELATING APPLICANTS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving:

Interests

A

- activities that are nonsocial in nature, and are carried on in relation to processes, machines and techniques;
- activities leading to satisfaction from tangible results, such as is achieved when badly damaged paintings or other objects are restored to their original state.

B

- activities dealing with things and objects;
- activities concerned with people and the communication of ideas.

Temperaments

- evaluation of information against measurable or verifiable criteria;
- evaluation of information against sensory or judgmental criteria, such as examining and appraising documents or paintings to determine their historical significance or value;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

OTHER REQUIREMENTS

Works in Cluster A require the ability to sensitively consider and interpret the original condition and function of a mechanical, animate,

or artistic object, to ensure that its restored state is harmonious with its original state, and to achieve appropriate aesthetic effect.

GROUP 2359

OCCUPATIONS IN LIBRARY, MUSEUM AND ARCHIVAL SCIENCES, N.E.C.

This group includes occupations, not elsewhere classified, concerned with designing exhibits for museums, ensuring the preservation of pictures, statues and other art objects in art galleries, and searching for data requested by encyclopedia owners.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS										
		Aptitudes										PA EC GED SVP Ints. Temps.
		G	V	N	S	P	Q	K	F	M	E	C
2359-110	EXHIBIT DESIGNER, MUSEUM (educ.)	<u>2</u>	<u>2</u>	<u>2</u>	<u>3</u>	<u>3</u>	3	4	4	4	5	3
2359-114	CHIEF CONSERVATIONIST, ART GALLERY (educ.)	<u>2</u>	<u>2</u>	3	3	<u>2</u>	4	<u>3</u>	<u>3</u>	3	5	<u>2</u>
2359-118	INFORMATION SERVICES WORKER, ENCYCLOPEDIA (educ.)	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5
												L
												L 7
												S 567
												I
												5
												8
												827
												90Y45
												I
												4
												9
												71
												0Y91
												4
												6
												6
												90

EDUCATIONAL AND VOCATIONAL COUNSELLORS

WORK PERFORMED

This chapter includes occupations concerned with counselling individuals or groups on education, vocational and social matters to assist them in their planning and decisions regarding educational and vocational choices. Worker functions include: co-ordinating guidance programs and available resources of other community and governmental agencies to assist in meeting the developmental needs of the individual; and counselling individuals and groups regarding educational planning, vocational selection, educational programs, and in choosing and preparing for an occupation. Work activities include: conducting and interpreting results of psychological or other tests; interviewing clients, parents and other personnel, and examining documents, such as school and work records, to obtain and integrate information about a student or worker; and assisting a client by developing a plan of study or training by appraising his abilities, aptitudes, interests, personal characteristics, work experience, and vocational opportunities.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2391-110	GUIDANCE HEAD (educ.)	6	8	2391-118	COUNSELLOR, EDUCATIONAL (educ.)	5	7
2391-114	COUNSELLOR, GENERAL (educ.; social wel.)	5	7	2391-122	COUNSELLOR, VOCATIONAL (educ.; social wel.)	5	7

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 56	I	6-5	8-7	4658	594
<u>1</u>	<u>1</u>															

APTITUDES AND CAPACITIES

Educational and Vocational Counsellors require:

- learning ability to acquire knowledge and understand and apply principles and techniques involved in counselling on educational, vocational and social matters;
- verbal ability to communicate effectively when counselling individuals and groups, and when consulting with professional colleagues;
- clerical ability to conduct, score and interpret the results of intelligence, interest and aptitude tests, and to maintain records.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- a bachelor's degree in arts or education;
- three years of teaching experience;
- certification in accordance with provincial regulations which vary considerably from province to province;
- completion of one, two or more years of post-graduate studies or summer courses leading to a guidance specialist certificate;

OR

- a master's degree in education or counselling; and,
- one to two years of teaching experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Educational and Vocational Counsellors who exhibit leadership and supervisory potential may advance to 2391-110 GUIDANCE HEAD or to managerial, administrative or personnel positions, such as some of those included in Chapter 1174, PERSONNEL AND RELATED OFFICERS, or Chapter 113/114 under Administrators in Teaching and Related Fields, and Personnel and Industrial Relations Management Occupations.

Transfer

Transfer opportunities are normally limited to Chapter 2399, OTHER OCCUPATIONS IN SOCIAL SCIENCES AND RELATED FIELDS, N.E.C., and to some occupations in Chapter 1174, PERSONNEL AND RELATED OFFICERS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- working with people for their presumed good as in the social welfare sense, such as counselling students or workers in educational, vocational or social matters;
- dealing with people and the communication of ideas by assisting clients in the planning and decisions regarding their futures;
- activities where the counsellor gains the confidence, respect and esteem of his clients;
- activities of an abstract and creative nature;
- 2391-110 GUIDANCE HEAD, also requires a preference for activities involving business contact with people, supervising a group of subordinate counsellors, and administering the entire counselling program, including promoting and maintaining good relations with staff and public.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions by assisting them to plan their educational or occupational futures;
- the evaluation of information against sensory or judgmental criteria;
- the direction, control and planning of an entire activity or the activities of others, such as individual or group counselling activities.

OTHER REQUIREMENTS

- Sincerity and interest;
- ability to achieve rapport and to inspire confidence.

OTHER OCCUPATIONS IN SOCIAL SCIENCES AND RELATED FIELDS, N.E.C.

This group includes occupations in social sciences and related fields, not elsewhere classified, concerned with counselling individuals, such as the physically or mentally handicapped or former inmates of corrective institutions, to obtain suitable training and employment, and to promote the rehabilitation of such individuals.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS										
		Aptitudes										Ints. Temps.
		G	V	N	S	P	Q	K	F	M	E	
2399-110	REHABILITATION SPECIALIST (gov. serv.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5
		S	56		I	5	8	468	45971			
2399-114	COUNSELLOR, REHABILITATION (medical; social wel.)	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5
		S	56		I	5	7	468	45971			
2399-118	CLASSIFICATION OFFICER, CORRECTIONAL INSTITUTION (gov. serv.)	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5
		S	56		I	5	7	468	45971			

MINISTERS OF RELIGION

WORK PERFORMED

This chapter includes occupations concerned with providing leadership, motivation, and religious training for the spiritual life of a congregation and community of a religious faith. Worker functions include: synthesizing and analyzing data to develop concepts or interpretations in the preparation of sermons, lectures and talks; and advising, counselling and guiding individuals with regard to their problems. Work activities include: conducting services of public worship; administering sacraments; conducting individual and family counselling; maintaining religious traditions; supervising religious education; and performing other duties associated with the practise and exposition of a religious faith.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2511-110	MINISTER (religion)	6	8	2511-114	RABBI (religion)	6	8

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	3	4	4	3	4	4	4	5	5		L	I	6-5	8-7	4658	79451
<u>2</u>	<u>2</u>																

APTITUDES AND CAPACITIES

Ministers of Religion require:

- learning ability to acquire the necessary academic background and to understand and apply basic theological concepts with sound reason, judgment and understanding to situations as they are encountered in daily life;

- verbal ability to understand the meaning of words and ideas associated with them, to use them effectively, and express them clearly in written or oral form in preparing and preaching sermons or delivering talks or lectures, and to make the sermons or talks relevant to the congregation or audience of any age group.

TRAINING AND ENTRY REQUIREMENTS

Training for the occupations of the Ministers of Religion may take one of the following forms:

- in some faiths, secondary-school graduation plus training in a college oriented to their requirements;
- in other faiths, secondary-school graduation and training in seminaries where the training embraces university undergraduate level

studies, coupled with theological training from eight to twelve years leading to ordination;

- in the remaining faiths, a course leading to an undergraduate degree, followed by a thorough selection process, and theological training of three years leading to a degree in theology, and to ordination.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

In some denominations, advancement is made to higher offices on the basis of selection or election either for a fixed term or for life. Some congregations within denominations are autonomous in their own right, and a minister for this type of congregation has reached the highest office to which he can aspire in this capacity.

Transfer

Ministers of Religion who have the necessary additional qualifications may transfer to areas of specialization within the religious organization or in other organizations where their qualifications could be applied, for example social service, teaching, administration.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- working with people for their presumed good by understanding the individual in terms of his spiritual well being, visiting in times of sickness or sorrow, and advising and counselling on personal problems;
- activities concerned with people and the communication of ideas, such as giving individual or group instruction in the tenets of a particular faith, preaching sermons and delivering talks;
- activities resulting in the esteem of others by exemplifying and fostering a life style consistent with one's faith;
- activities of an abstract and creative nature, such as conceiving and developing sermons, homilies and talks dealing with fresh insights into scripture and its relationship to life or spiritual problems, and in new theological interpretations of biblical thought.

Temperaments

- influencing people in their opinions, attitudes or judgments about ideas when delivering sermons or conducting classes of instruction intended to motivate members of his congregation or to explain religious dogma, doctrine or history;
- the evaluation of information using judgmental criteria, such as in the interpretation of scripture and the application of laws, rules and regulations applicable to a particular denomination or faith;
- the direction, control and planning of an entire activity or the specific activities of a religious body;
- dealing with people in his ministry beyond giving and receiving instructions, such as assisting in solving problems generated by social upheaval of family units or individuals;
- a variety of duties often characterized by frequent change, such as conducting services of public worship, performing marriages, counselling people of all ages, administering financial assets, and visiting the sick and indigent.

GROUP 2519

OCCUPATIONS IN RELIGION, N.E.C.

This group includes occupations, not elsewhere classified, concerned with assisting Ministers of Religion by providing religious education and counselling to members of the congregation, or promoting church sponsored social activities.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																	
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.		
		G	V	N	S	P	Q	K	F	M	E	C							
2519-110	CANTOR (religion)	<u>2</u>	<u>2</u>	3	4	4	3	4	4	4	5	5	L 56	I	5	8	65	5491	
2519-114	RELIGIOUS EDUCATION WORKER (religion)	<u>2</u>	<u>2</u>	3	4	4	3	4	4	4	4	5	5	L	I	5	7	645	75941

UNIVERSITY TEACHERS

WORK PERFORMED

This chapter includes occupations concerned with teaching and research activities within an area of specialization in universities and degree-granting colleges. Worker functions include: teaching one or more subjects or specializations through lectures and demonstration; analyzing and evaluating subject matter to determine course requirements; and organizing and co-ordinating curriculum and course schedules. Work activities include: preparing and delivering lectures to students; conducting seminars or laboratory sessions; compiling bibliographies of specialized materials for outside reading assignments; preparing and administering examinations and grading answer papers; assigning and marking essays; directing research programs of graduate students; conducting research in a particular field of knowledge, and publishing findings in books or professional journals; serving on faculty committees concerned with such matters as curriculum revision, academic planning and degree requirements; advising students on academic and other matters; providing professional consultative services to government, industry and private individuals; and teaching in an adult education or university extension program, by means of correspondence courses or night classes.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

**2711-110 DEPARTMENT CHAIRMAN,
COLLEGE OR UNIVERSITY
(educ.)**

6 8

B

GED SVP

**2711-112 UNIVERSITY TEACHER,
AGRICULTURE (educ.)**

6 8

**2711-114 UNIVERSITY TEACHER,
EDUCATION (educ.)**

6 8

**2711-118 UNIVERSITY TEACHER,
ENGINEERING &
ARCHITECTURE (educ.)**

6 8

**2711-122 UNIVERSITY TEACHER,
HUMANITIES (educ.)**

6 8

**2711-126 UNIVERSITY TEACHER, LAW
(educ.)**

6 8

**2711-130 UNIVERSITY TEACHER, LIFE
SCIENCES (educ.)**

6 8

**2711-134 UNIVERSITY TEACHER,
MATHEMATICS (educ.)**

6 8

**2711-138 UNIVERSITY TEACHER, MEDICAL
SCIENCES (educ.)**

6 8

**2711-142 UNIVERSITY TEACHER,
PHYSICAL SCIENCES (educ.)**

6 8

**2711-146 UNIVERSITY TEACHER, SOCIAL
SCIENCES (educ.)**

6 8

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>1</u>	<u>1</u>	<u>2</u>	4	3	<u>3</u>	4	4	4	5	5	S 56	I	6	8	265 457901	
B	<u>1</u>	<u>1</u>	3	3	<u>2</u>	<u>3</u>	4	4	4	5	5	L 56	I	6	8	6854 457901	
	<u>2</u>		<u>2</u>	4	3		3	3	3		4						
			<u>1</u>	<u>2</u>	4												

APTITUDES AND CAPACITIES

University Teachers require:

- learning ability to understand, and apply the basic principles and techniques of a particular area of study;
- verbal ability to understand language and terminology of text books and related reference materials, and to communicate subject matter effectively, orally and in writing;
- numerical ability to employ advanced mathematics and complex formulae, particularly when teaching engineering, mathematics and physical sciences;

- ability to perceive spatial relationships when teaching architecture, engineering or medical sciences;
- perceptual ability to note slight differences in visual matter when teaching architecture, engineering, and medical, life and physical sciences;
- clerical perception when preparing reports and bibliographies, setting and grading of examinations, and compiling and analyzing statistical research data.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter require:

- a three to four-year program in a university faculty of education leading to a bachelor’s degree in pedagogy or a similar specialty; and

- two or more years of post-graduate studies leading to at least a master’s degree and preferably a doctor’s degree.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

For workers in Cluster B, advancement is through the ranks of assistant professor, associate professor to full professor. Beyond this, advancement is to more administratively oriented posts, such as 2711-110 DEPARTMENT CHAIRMAN, COLLEGE OR UNIVERSITY or to 1133-110 ACADEMIC DEAN, UNIVERSITY OR COLLEGE.

Transfer

Transfer is possible and is normally to research or consultation positions in industry or government.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to university teaching occupations require significant interests in, and dispositions for work including the following.

Interests

- A
- business contact with people;
 - dealing with people and communicating ideas;
 - work resulting in prestige or the esteem of others.
- B
- dealing with people and communicating ideas;
 - abstract and creative work or experiences;
 - work resulting in prestige or the esteem of others;
 - working for people for their presumed good as in the social welfare sense, or for dealing with people and language in social situations.

Temperaments

- directing, controlling and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- influencing people in their opinions, attitudes or judgments about ideas or things;
- evaluation of information against sensory or judgmental criteria;
- evaluation of information against measurable or verifiable criteria;
- performing a variety of duties often characterized by frequent change.

UNIVERSITY TEACHING AND RELATED OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with assisting university faculty members in teaching and research activities.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
2719-110	GRADUATE ASSISTANT (educ.)	2	2	3	3	3	3	4	4	4	5	5	L 57	I	5	7	6	590Y

ELEMENTARY AND KINDERGARTEN TEACHERS

WORK PERFORMED

This chapter includes occupations concerned with teaching a variety of subjects below the secondary school level. Worker functions include: teaching subject matter through explanation, demonstration and supervised practice; operating and handling audiovisual aids and other equipment; ascertaining the learning abilities of the pupils in relation to the subject matter, and determining the method, amount, complexity and kind of instruction which will achieve maximum progress; and evaluating students' progress. Work activities include: teaching basic academic subjects, such as reading, writing, and arithmetic; developing self-expression, self-confidence and social skills; teaching songs, games, art and manipulative tasks; instilling a sense of cleanliness, obedience and co-operation in pupils; and observing children to detect signs of ill health, emotional disturbance, or learning disabilities.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2731-110	ELEMENTARY-SCHOOL TEACHER (educ.)	5	6	2731-114	KINDERGARTEN TEACHER (educ.)	5	6
				2731-118	PRE-SCHOOL TEACHER (educ.)	4	6

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	4	L 456	B	5-4	6	645	4590
<u>3</u>	<u>3</u>	4			4											

APTITUDES AND CAPACITIES

- Elementary and Kindergarten Teachers require:
 - learning ability to understand and apply the basic principles and techniques used in the field of elementary education;
 - verbal ability to effectively communicate subject matter and answer pupils' questions satisfactorily;
- numerical ability to teach arithmetic and to compute grades for evaluating pupils' progress;
 - clerical perception in keeping records of pupils' attendance, test results and progress.

TRAINING AND ENTRY REQUIREMENTS

- Workers in this chapter normally require:
 - one or more years of university studies; or
 - from one to three years of training at a teachers' college, depending on provincial requirements for certification;
- AND
- certification in accordance with provincial standards.
- For higher levels of certification, additional periods of study leading to a bachelor's degree in education are required together with an additional number of years of teaching experience.
- Pre-school Teachers normally require:
 - a two-year program in a community college; or
 - a four-year university program in early childhood education; or
 - several years of experience supplemented by part-time studies.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Teachers may advance to positions with more administrative responsibility, or to 1133-142 PRINCIPAL if they possess the necessary qualifications.

Transfer

Transfer may be to certain occupations in Chapter 2795, TEACHERS OF EXCEPTIONAL STUDENTS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with people and communicating ideas;
- working for people for their presumed good as in the social welfare sense, or for dealing with people and language in social situations;
- work resulting in prestige or the esteem of others.

Temperaments

- the direction, control, and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria;
- the evaluation of information against measurable or verifiable criteria.

OTHER REQUIREMENTS

- emotional stability and patience in dealing with pupils;
- ability to maintain rapport with children.

SECONDARY-SCHOOL TEACHERS

WORK PERFORMED

This chapter includes occupations concerned with teaching academic or vocational subjects in secondary schools. Worker functions include: teaching subject material through explanation, demonstration and supervised practice; operating laboratory apparatus, shop tools, audiovisual aids or other equipment; examining and evaluating required subject matter and students' progress. Work activities include: preparing and presenting lesson materials; assigning lessons and correcting work assignments; preparing, administering and marking tests and recording results; maintaining discipline in classrooms and in other school areas; participating in staff meetings, educational conferences and teacher-training workshops; sponsoring special activities in student organizations; assisting students in selecting courses of study; and advising them on academic and other problems.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

2733-110 SECONDARY-SCHOOL TEACHER,
ACADEMIC (educ.)

5 7

B

GED SVP

2733-114 SECONDARY-SCHOOL TEACHER,
VOCATIONAL (educ.)

4 8

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	<u>2</u>	<u>3</u>	4	3	<u>3</u>	4	4	4	5	4	L 456	I	5	7	654	4590	
B	<u>2</u>	<u>2</u>	<u>3</u>	3	3	<u>3</u>	3	3	3	5	4	L 456	I	4	8	6549	4590	

APTITUDES AND CAPACITIES

Secondary-School Teachers require:

- ability to learn, understand and apply the basic principles and techniques used in the field of education, and to acquire the necessary background in the subject matter area;
- verbal ability to understand the language of text books and related

subject material, and to communicate subject matter and answer questions effectively;

- numerical ability to understand and apply mathematical concepts when teaching mathematics and science subjects, and when computing grades for evaluating students' progress;
- clerical perception to keep records of attendance, test results and students' progress.

TRAINING AND ENTRY REQUIREMENTS

Secondary-School Teachers, Academic, depending on the province, normally require:

- completion of a three- or four-year university program, including courses in pedagogy and subject matter to be taught in schools, leading to a Bachelor of Education degree;

OR

- a three-year university program leading to a Bachelor of Arts or Science degree; and
- one year of teacher training in a university faculty of education.

On completion of either of the above programs, a letter of standing and a certificate is granted by the provincial Department of Education. Usually the certificate is valid for from one to four years and may be

made permanent after two years of satisfactory teaching experience. In some provinces, however, the permanent certificate is granted on completion of the university program.

Secondary-School Teachers, Vocational, depending on the province, normally require:

- completion of a three to five year apprenticeship program or equivalent training in a trade technology or applied arts; and,
- from two to five years of experience in employment;

OR

- a three-or four-year university program leading to a degree in a field

of specialization, such as home economics, applied science or commerce;

OR

- a two-or three-year program at a college of technology or applied arts; and
- one year of teacher training in a university faculty of education.

On completion of one of the above programs, a letter of standing and a certificate endorsed as to the specialization in business, industry or arts, is granted by the provincial Department of Education. Usually the certificate is valid for from one to four years and may be made permanent after two years of satisfactory teaching experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for teachers of academic or vocational subjects may be to department head positions or to 1133-142 PRINCIPAL.

Transfer

Transfers for Secondary-School Teachers may be to 2799-118, INSTRUCTOR, CORRESPONDENCE SCHOOL, or to occupations requiring similar qualifications in Chapter 2791, COMMUNITY COLLEGE AND VOCATIONAL SCHOOL TEACHERS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Secondary-School Teachers normally require significant interests in, and dispositions for work involving the following:

Interests

- dealing with people and the communication of ideas;
- activities resulting in prestige and esteem of others;
- working for people for their presumed good as in the social welfare sense or for dealing with people and language in social situations.

Additionally, for vocational teachers;

- non-social work, carried on in relation to processes, machines, or techniques.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria.

OTHER REQUIREMENTS

- emotional stability and patience with students;
- ability to maintain good relations with students, parents and staff members.

COMMUNITY COLLEGE AND VOCATIONAL SCHOOL TEACHERS

WORK PERFORMED

This chapter includes occupations concerned with teaching vocational and academic subjects in vocational institutes, community colleges or private vocational schools. Worker functions include: instructing students through lectures, demonstrations, seminars, discussions and other means; and examining and evaluating required subject matter and students' progress. Work activities include: preparing teaching outlines for courses of study; advising students on school curricula; preparing, administering and marking tests; participating in faculty committee activities; keeping abreast of new developments in teaching specialties by attending conferences and by reading pertinent and current literature; and participating in school extension programs.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
2791-110	ACADEMIC TEACHER, VOCATIONAL INSTITUTE (educ.)	5	7	2791-118	VOCATIONAL TEACHER, BUSINESS SUBJECTS (educ.)	5	7
2791-114	VOCATIONAL TEACHER, APPLIED-ARTS SUBJECTS (educ.)	5	7				

B

		GED	SVP			GED	SVP
2791-122	VOCATIONAL TEACHER, TECHNOLOGICAL SUBJECTS (educ.)	5	7	2791-126	VOCATIONAL TEACHER, TECHNICAL SUBJECTS (educ.)	5	7

QUALIFICATIONS PROFILES

Aptitudes													PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	<u>2</u>	<u>3</u>	4	3	<u>3</u>	4	4	4	5	5	L 456	I	5	7	654	45790	
			<u>2</u>			<u>2</u>												
B	<u>2</u>	<u>2</u>	<u>2</u>	3	3	<u>3</u>	3	3	3	4	4	L 456	I	5	7	6547	45790	
			<u>2</u>															

APTITUDES AND CAPACITIES

Community College and Vocational School Teachers normally require:

- learning ability to understand and apply the basic principles and methods used in the field of education and to acquire necessary background in subject matter area;
- verbal ability to comprehend the literature and lecture material related to a particular teaching specialty and to communicate effectively with students, faculty and public;

- numerical ability for teaching mathematics and science subjects;
- clerical perception to accurately record data, or to instruct students in use of various accounting forms and registers;

Teachers in Cluster B also require:

- spatial perception to visualize three-dimensional objects represented by diagrams, blueprints and drawings, and to perceive relative paths, positions, or functions of stationary or moving parts.

TRAINING AND ENTRY REQUIREMENTS

Teachers in this chapter normally require:

A

- a three-to-four year university course of studies leading to a bachelor's degree; or
- for 2791-118 VOCATIONAL TEACHER, BUSINESS SUBJECTS;

minimum of secondary-school graduation plus at least a one-year course of studies in a business college or vocational institute, and several years of practical business experience.

B

- depending on the subject, the school system and current demand

situation, from one to three years of post-secondary education in an institute of technology or college of applied arts and technology, to a master's degree; and

— for some subjects, several years of industrial experience.

For some public-supported schools in some provinces, a teacher's certificate is required for occupations in both clusters.

Vocational Teachers of apprenticeable trades, such as draughting or welding, are usually required to provide proof of having completed an apprenticeship program which normally extends over a period of from two to four years.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Teachers who have supervisory potential and the required qualifications may advance to department head positions and to 1133-142 PRINCIPAL of a community college or vocational school, or to that of dean or president. Advancement is usually based on administrative ability, success as a teacher, educational background including teacher training, and the nature and quality of business or industrial experience.

Transfer

Transfers may be, for example, to 2799-118 INSTRUCTOR, CORRESPONDENCE SCHOOL, or to some occupations requiring similar qualifications in Chapter 2733, SECONDARY-SCHOOL TEACHERS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with people and the communication of ideas;
- work resulting in prestige or the esteem of others;
- working for people for their presumed good;

Additionally, for teachers in Cluster B:

- activities of a scientific and technical nature.

Temperaments

- the direction, control, and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- influencing people in their opinions, attitudes, or judgments about ideas or things;
- the evaluation of information against sensory or judgmental criteria, such as determining subject matter to be taught;
- the evaluation of information against measurable or verifiable criteria, such as measuring students' achievement using testing methods.

FINE ARTS TEACHERS

WORK PERFORMED

This chapter includes occupations concerned with teaching or instructing students in the arts of singing, music, painting, ceramics, sculpture, drama and dancing, in public or private schools. Worker functions include: instructing students in the history, theory or practice of fine art subjects; synthesizing lesson subject matter; analyzing students' capabilities and training needs; and precision in the utilization of artistic materials and in the application of teaching techniques and methods. Work activities include: planning programs of studies according to interest or ability of students; evaluating students' qualifications and progress; preparing and assigning special exercises and grading students' work; delivering lectures and demonstrating the use and selection of materials, utilizing various teaching aids; and ordering supplies.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2792-110	MUSIC TEACHER, VOCAL (educ.)	5	8	2792-118	TEACHER, ART (educ.)	5	7
2792-114	MUSIC TEACHER, INSTRUMENTAL (educ.)	5	8	2792-122	TEACHER, DRAMATIC ART (educ.)	5	7
				2792-126	TEACHER, DANCING (educ.)	4	7

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>2</u>	<u>2</u>	3	<u>2</u>	3	<u>3</u>	3	4	3	5	5	L	234567	I	5-4	8-7	568
	<u>3</u>	4	3	<u>2</u>	4	4	<u>2</u>	4	4	4						
			4			<u>2</u>	3		<u>1</u>	<u>1</u>						

APTITUDES AND CAPACITIES

Fine Arts Teachers normally require:

- learning ability to understand and apply principles of pedagogy, and to understand the theory and history of an art, such as painting, dancing or music;
- verbal ability to effectively present lesson subject matter and to discuss students' progress with them;
- spatial perception to demonstrate dance movements and steps in accordance with aesthetic principles, and in choosing dimensional objects for art lessons;
- form perception to critically assess students' work for 2792-118 TEACHER, ART;
- clerical perception to record and present information relative to students' attendance and progress, and to maintain records of equipment;
- eye-hand-finger co-ordination for 2792-114 MUSIC TEACHER, INSTRUMENTAL to demonstrate hand, wrist and finger movements required to play musical instruments;
- finger dexterity for 2792-118 TEACHER, ART to manipulate materials when demonstrating techniques;
- eye-hand-foot co-ordination for 2792-126 TEACHER, DANCING

- to demonstrate body, hand and foot movement to musical accompaniment;
- colour discrimination for 2792-118 TEACHER, ART to identify various colours and shades of colour, and colour combinations, and to combine paints and oils to develop colours and colour shades for particular applications;
- agility for activities involving maintaining balance and equilibrium and stooping and reaching to demonstrate dance movements for 2792-126 TEACHER, DANCING;
- capacity for activities involving handling and fingering for 2792-114 MUSIC TEACHER, INSTRUMENTAL to demonstrate holding and positioning of musical instruments, and for 2792-118 TEACHER, ART when working with materials or tools, such as clay, palette or knife;
- hearing for 2792-114 MUSIC TEACHER, INSTRUMENTAL to assess performances of students of music;
- visual acuity, depth perception and normal colour vision to assess finger movement of student of violin, to assess group dancing presentations and to identify colours and shades of colours when teaching painting.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- two, three or four years of studies in a university college of art or conservatory of music, depending on the specialty, preferably leading to a bachelor's degree;

- completion of educational and experience requirements leading to teacher certification in accordance with provincial regulations;
- for 2792-126 TEACHER, DANCING, a number of years training

under a qualified teacher of ballroom, tap or other recognized form of dancing.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancements

Teachers who are academically qualified, have leadership potential and other desirable attributes may advance to department head status, or assume duties of a consultant or specialist on a regional school board. Teachers may advance by establishing their own schools or studios.

Transfer

Fine Arts Teachers may transfer to related occupations in Minor Groups 331, OCCUPATIONS IN FINE AND COMMERCIAL ART, PHOTOGRAPHY AND RELATED FIELDS, and 333, OCCUPATIONS IN PERFORMING AND AUDIOVISUAL ARTS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- work resulting in prestige or the esteem of others;
- dealing with people and communicating ideas;
- abstract and creative work or experiences.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria, for example the performance of a violin student is assessed by closely observing the player's techniques, by carefully listening to the rendition and sometimes comparing his presentation to recordings made by well known artists;
- the interpretation of feelings, ideas, or facts in terms of personal viewpoint.

OTHER REQUIREMENTS

- ability to establish rapport with individuals and groups;
- creativity in the art being taught.

GROUP 2793

POST-SECONDARY SCHOOL TEACHERS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with teaching at a post-secondary school level in a variety of institutions.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
2793-110	TEACHER, BIBLE SCHOOL (educ.)	<u>2</u>	<u>2</u>	<u>2</u>	4	4	<u>3</u>	4	4	4	5	5	L 567	I	5	8	654	4590
2793-114	TEACHER, TEACHERS' COLLEGE (educ.)	<u>2</u>	<u>2</u>	<u>2</u>	4	4	<u>3</u>	4	4	4	5	5	L 567	I	5	8	654	4590
2793-118	NURSING INSTRUCTOR (educ.)	<u>2</u>	<u>2</u>	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	4	5	4	L 567	I	5	7	654	4590

TEACHERS OF EXCEPTIONAL STUDENTS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with teaching or rehabilitating handicapped persons.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
2795-110	TEACHER, EDUCATION-OF-THE BLIND (educ.)	<u>2</u>	<u>2</u>	<u>3</u>	3	4	<u>3</u>	3	3	4	5	5	L 56	I	5	7	465	4590
2795-114	TEACHER, MENTALLY-HANDICAPPED PERSONS (educ.)	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 567	I	5	7	465	4590
2795-118	TEACHER-OF-THE-DEAF (educ.)	<u>2</u>	<u>2</u>	<u>3</u>	4	3	<u>3</u>	4	4	4	5	5	L 567	I	5	7	465	4590
2795-122	TEACHER, PHYSICALLY HANDICAPPED PERSONS (educ.)	<u>2</u>	<u>2</u>	<u>3</u>	3	3	<u>3</u>	3	3	3	4	5	L 567	I	5	7	465	4590
2795-126	TEACHER, REHABILITATION-OF THE-BLIND (educ.)	<u>3</u>	<u>3</u>	3	3	4	4	4	3	4	5	5	L 4567	B	4	6	465	4590

FLYING INSTRUCTORS

WORK PERFORMED

This chapter includes occupations concerned with instructing student pilots and giving refresher courses to experienced pilots and flying instructors in flight procedures and techniques, aviation regulations, meteorology and navigation. Worker functions include: instructing student pilots in theoretical principles and basic techniques of flying fixed-wing aircraft, helicopters, gyroplanes and gliders; conducting familiarization programs for experienced pilots in the techniques of operating new aircraft; piloting aircraft to demonstrate the proper methods of controlling aircraft in flight; analyzing data related to, and assessing performance of, pilots to prepare comprehensive reports and recommendations; and co-ordinating instruction and test programs. Work activities include: assessing proficiency of pilots and instructors in flying specific types of aircraft; and accompanying students on training flights and demonstrating techniques for effective control of aircraft.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
2797-110	CHIEF-FLYING INSTRUCTOR (educ.)	5	8	2797-122	FLYING INSTRUCTOR (educ.)	5	7
2797-118	INSTRUCTOR, AIRLINE PILOT (air trans.)	5	8	2797-126	FLYING INSTRUCTOR, HELICOPTER (educ.)	5	7

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	3	<u>2</u>	3	3	<u>3</u>	4	L 4567	B	5	8-7	659	59Y08

APTITUDES AND CAPACITIES

Flying Instructors require:

- learning ability to understand the theory of flight and its application to fixed or rotary winged aircraft, to understand instructions and carry out orders correctly, and reasoning ability to assess the needs and progress of those being instructed;
- verbal ability to understand technical language associated with aircraft and to exchange ideas comprehensibly and effectively;
- numerical ability to use mathematics applicable to aeronautical navigation, and to make calculations accurately;
- spatial perception to visualize position and path of an aircraft and its relation to surroundings, to judge distances accurately, and to visualize details of the ground from maps and other navigational aids;

- form perception to perceive pertinent detail on graphic material, such as maps and charts;
- eye-hand-finger co-ordination to move throttles, levers and other controls rapidly and accurately;
- eye-hand-foot co-ordination to make movements with hands and feet in response to visual stimuli, when using feet to control rudders and hands to adjust stick, throttle and other controls;
- capacity to express ideas clearly by means of the spoken word when transmitting information over radio transmitters;
- capacity to hear radio communications concerning landing and taking-off instructions and inter-communication in the aircraft, while subject to distracting noises, such as radio inter-communication and engine noises;
- visual acuity, both near and far, depth perception, good field of vision, and good colour perception.

TRAINING AND ENTRY REQUIREMENTS

Flying Instructors normally require:

- a valid Commercial or Airline Pilot license;
- proof of specified number of hours of flight experience; and
- complete written examinations and flight tests set by the federal Department of Transport.

Helicopter and Gyroplane Instructors require similar qualifications as set out above, except that flight experience on helicopters or gyroplanes is required.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Flying Instructors may advance to more senior flying instructor classes by acquiring the necessary flight time and passing examinations set by the federal Department of Transport.

Transfer

Flying Instructors may transfer to other flying duties as described under Chapter 9111 - AIR PILOTS, NAVIGATORS AND FLIGHT ENGINEERS, such as 9111-110 TEST PILOT or 9111-122 EXECUTIVE PILOT.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with people and the communication of ideas;
- work resulting in the prestige or esteem of others as reflected in the training of competent pilots;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- evaluation of information against sensory or judgmental criteria when advising students on the proper techniques in landing and take-off procedures;
- precise attainment of set limits, tolerances or standards;
- evaluation of information against measurable or verifiable criteria;
- performing adequately under stress when confronted with critical or unexpected situations.

GROUP 2797B

INSTRUCTORS AND TRAINING OFFICERS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with instructing or training workers in commercial, governmental or industrial establishments.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
2797-114	SUPERVISOR, STAFF TRAINING AND DEVELOPMENT (educ.)	<u>2</u>	<u>2</u>	4	3	4	<u>3</u>	4	4	4	5	5	L 456	I	5	8	65	45901
2797-130	GROUND-SCHOOL INSTRUCTOR (educ.)	<u>2</u>	<u>2</u>	4	<u>3</u>	4	<u>3</u>	3	4	4	4	4	L 4567	I	4	7	65	45901
2797-134	INSTRUCTOR, POLICE (educ.)	<u>2</u>	<u>2</u>	4	4	4	4	3	4	4	4	4	L 4567	I	4	7	65	45901
2797-138	INSTRUCTRESS, AIRLINE STEWARDESS (educ.)	<u>3</u>	<u>3</u>	4	4	4	4	4	4	4	4	4	L 4567	I	4	7	65	45901
2797-142	TRAINING REPRESENTATIVE (educ.)	<u>3</u>	<u>3</u>	4	3	4	<u>3</u>	4	4	4	5	5	L 456	I	4	7	65	45901
2797-146	INSTRUCTOR, AUTO DRIVING (educ.)	<u>3</u>	<u>3</u>	4	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4	L 456	B	4	6	65	4590

OTHER TEACHING AND RELATED OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with teaching and related activities such as, co-ordinating educational programs within a school system, providing audiovisual and other educational resource assistance, instructing students in physical-education activities, and conducting correspondence courses and recreational or self-improvement training.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
2799-110	PROGRAM CO-ORDINATOR (educ.)	<u>2</u>	<u>2</u>	3	4	4	3	4	4	4	5	5	S 56	I	5	8	625	95
2799-114	AUDIOVISUAL SPECIALIST (educ.)	<u>2</u>	<u>2</u>	3	3	<u>3</u>	4	3	3	3	5	4	L 4567	I	5	7	69	95
2799-116	PHYSICAL-EDUCATION TEACHER (educ.)	<u>2</u>	<u>2</u>	3	<u>3</u>	3	<u>3</u>	3	4	3	<u>2</u>	5	M 2345	B	5	7	645	4590
2799-118	INSTRUCTOR, CORRESPONDENCE SCHOOL (educ.)	<u>2</u>	<u>2</u>	<u>3</u>	3	4	<u>3</u>	4	4	4	5	5	S	I	5	7	64	90
2799-122	EDUCATIONAL-RESOURCES ASSISTANT (educ.)	<u>3</u>	<u>3</u>	3	3	3	<u>3</u>	4	3	3	5	4	L 4567	I	4	6	69	90Y
2799-126	INSTRUCTOR, CHARM COURSE (educ.)	<u>3</u>	<u>3</u>	4	3	3	4	4	4	4	5	<u>3</u>	L 567	I	4	4	68	59X

PHYSICIANS AND SURGEONS

WORK PERFORMED

This chapter includes occupations concerned with diagnosing, treating and preventing illnesses in humans. Worker functions include: analyzing data obtained from examination, laboratory tests and other diagnostic aids to determine the nature and extent of disorders; determining the kind and sequence of treatment required; using with extreme precision, surgical and medical instruments and laboratory equipment; and advising and counselling patients on prescribed treatments and health care. Work activities include: conducting medical examinations; prescribing drugs or other remedial treatments; performing surgery; administering treatments using special techniques and equipment; and acting as consultant to other physicians.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3111-110	CARDIOLOGIST (medical)	6	9	3111-146	SURGEON, GENERAL (medical)	6	9
3111-114	DERMATOLOGIST (medical)	6	9	3111-150	UROLOGIST (medical)	6	9
3111-118	INTERNIST (medical)	6	9	3111-154	ANAESTHETIST (medical)	6	9
3111-122	NEUROLOGIST (medical)	6	9	3111-158	PAEDIATRICIAN (medical)	6	9
3111-126	OBSTETRICIAN-GYNAECOLOGIST (medical)	6	9	3111-162	PSYCHIATRIST (medical)	6	9
3111-130	OPHTHALMOLOGIST (medical)	6	9	3111-166	PHYSICIAN, GENERAL PRACTICE (medical)	6	8
3111-134	OTOLARYNGOLOGIST (medical)	6	9	3111-170	PHYSICIAN, OCCUPATIONAL HEALTH (medical)	6	8
3111-138	PHYSIATRIST (medical)	6	9	3111-174	MEDICAL OFFICER, CIVIL AVIATION (medical)	6	8
3111-142	RADIOLOGIST (medical)	6	9				

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>1</u>	<u>1</u>	2	<u>1</u>	<u>2</u>	3	2	<u>2</u>	2	5	3	L 4567	I	6	9-8	754	05981
			<u>2</u>	<u>1</u>	2	3	<u>1</u>	<u>1</u>	4	4						
						<u>1</u>										

APTITUDES AND CAPACITIES

Physicians and Surgeons require:

- intellectual ability to acquire a knowledge of the medical sciences, analytical ability to derive the nature, origin and probable course of illness or disorder from diagnostic and historical information, and the judgment to apply this knowledge to the treatment of patients;
- verbal ability to learn and use medical terminology and to communicate effectively with people at all levels;
- spatial perception to visualize position and arrangement of unseen

organs, bone structure and body-tissue from X-ray photographs, thermography, and knowledge of anatomy;

- form perception to see details in body structure and to observe physical indications of disease or damage in body organs or body tissue;
- finger dexterity for administering injections and performing surgery;
- manual dexterity and eye-hand-finger co-ordination to use surgical instruments and apparatus with precision and speed.

TRAINING AND ENTRY REQUIREMENTS

Physicians and surgeons normally require:

- two or more years in an approved university Faculty of Arts and Sciences;
- four years of study in the medical faculty of a university to acquire the M.D. degree;

- one year of internship of an approved hospital, which may also be considered as the fifth year of medical study;
- the right to practice medicine, accorded by license and awarded by the appropriate Provincial Medical Council of the College of Physicians and Surgeons.

To obtain specialist qualifications an additional three to five years of

advanced study and training in an approved hospital is necessary. Official recognition is obtained by writing the examinations of the

Royal College of Physicians and Surgeons, or the provincial medical authority regulating medical specialties.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Most physicians and surgeons are self-employed, therefore advancement possibilities are usually a matter of personal choice when deciding to enter private practice, medical research or administration.

Transfer

Similarly, transfer is a matter of personal choice and may be to, for example, teaching or administration.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- scientific and technical work as it relates to health;
- work resulting in prestige or esteem of others;
- working for people for their presumed good as in the medical and social welfare sense.

Temperaments

- evaluation of information against measurable or verifiable criteria;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria;
- performing adequately under stress when confronted with the critical or unexpected or taking risks;
- a variety of duties characterized by frequent change.

DENTISTS

WORK PERFORMED

This chapter includes occupations concerned with diagnosis, prevention and treatment of diseases, injuries or abnormalities of the teeth, gums, and related oral structures. Worker functions include: analyzing data obtained from examination, X-ray or use of other diagnostic equipment to determine treatment required to alleviate ailments, correct abnormalities, and treat injuries; skilfully handling dental and surgical instruments when performing surgery or applying special treatments; and advising patients in oral health. Work activities include: examining teeth, gums and related structures to determine condition; performing oral surgery; designing, fabricating and fitting oral appliances and dental prostheses; preparing and filling cavities; and extracting teeth.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3113-110	ENDODONTIST (medical)	6	8	3113-122	PAEDODONTIST (medical)	6	8
3113-114	ORAL SURGEON (medical)	6	8	3113-126	PERIODONTIST (medical)	6	8
3113-118	ORTHODONTIST (medical)	6	8	3113-130	PROSTHODONTIST (medical)	6	8
				3113-134	DENTIST (medical)	5	8

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	2	<u>1</u>	<u>2</u>	3	<u>2</u>	<u>2</u>	<u>2</u>	4	3		L 4567	I	6-5	8	7415	05Y1
<u>2</u>	<u>2</u>																

APTITUDES AND CAPACITIES

Dentists require:

- learning ability to understand and apply knowledge and techniques required to restore and preserve oral health;
- verbal ability to understand and effectively employ the technical and scientific vocabulary associated with dentistry, and to communicate with others at all levels;
- spatial perception to recognize abnormalities in physical structure of teeth, jaws and other dental-facial structures, to design and fit corrective dental appliances that alter position and relationship of teeth and jaws, to design, fabricate and fit dental prostheses from mould of teeth, gums and jaws, and to visualize anatomy from X-rays;

- form perception to examine teeth, gums and related oral structures for disease or other abnormalities, and to analyse X-rays to aid in diagnosis;
- eye-hand and eye-finger co-ordination, finger dexterity and manual dexterity to manipulate dental and surgical instruments skilfully and accurately while working in the confined area of the oral cavity;
- colour discrimination to match dentures, crowns or inlays to the natural colour of the patient's teeth, to recognize abnormal colour of gums that might indicate disease, and to discriminate between shades of grey to make diagnosis from X-rays;
- near visual acuity.

TRAINING AND ENTRY REQUIREMENTS

Dentists normally require:

- a minimum of one or two years academic study at the university level;
- a four to five years program at a university school of dentistry,

leading to the degree of Doctor of Dental Surgery — D.D.S. — or Doctor of Dental Medicine — D.M.D.;

- additional post graduate study and clinical training for specialization;
- registration with, and current licencing of the regulating authority of the province or territory in which they plan to practice.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement is possible, for 3113-134 DENTIST, by specialization in an area of dental care, provided the necessary qualifications are possessed.

Transfer

Transfer may be to private practice, alone or with other dentists, to universities, dental schools, government agencies and private organizations. Positions may be in clinical practice, research, teaching or administration.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- scientific or technical work;
- working for people for their presumed good as in the social welfare sense;
- dealing with things and objects;
- the prestige or esteem of others.

Temperaments

- the evaluation of information against measurable or verifiable criteria as when using diagnostic equipment such as X-ray or vitalometer to assist in determining disease or abnormality;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the precise attainment of set limits, tolerances, or standards as when fabricating and fitting oral appliances or dental prostheses, performing surgery and administering anaesthesia;
- a variety of duties often characterized by frequent change.

VETERINARIANS

WORK PERFORMED

This chapter includes occupations concerned with diagnosing, preventing and treating animal disorders. Worker functions include: analyzing the results of physical examinations or from the use of various diagnostic techniques to determine the presence of abnormal conditions or extent of injuries in animals; using clinical instruments and work aids with precision to perform surgery, inoculations, laboratory tests and autopsies; and advising and counselling on the care and breeding of animals. Work activities include: dressing wounds and setting broken bones; testing for infectious diseases; and administering sedations, analgesics, and general or local anaesthetics.

LIST OF OCCUPATIONAL TITLES

GED SVP

3115-110 VETERINARIAN
(prof. & tech., n.e.c.)

5 8

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Init.	Temps
G	V	N	S	P	Q	K	F	M	E	C							
<u>1</u>	<u>1</u>	2	<u>1</u>	<u>2</u>	3	<u>2</u>	<u>2</u>	2	5	3		L 4567	I 6	5	8	76	09Y51
<u>2</u>	<u>2</u>																

APTITUDES AND CAPACITIES

Veterinarians require:

- learning ability and intellectual capacity to acquire a thorough knowledge of veterinary medicine, and reasoning ability to diagnose and treat the diseases of animals;
- verbal ability to use and comprehend the terminology of veterinary science and to accurately give or receive information orally and in writing;
- spatial perception to visualize the position and arrangement of internal organs and bone structures from X-ray photographs and knowledge of anatomy;

- form perception to detect animal injuries, diseases, infections or other abnormal conditions during physical examinations;
- eye-hand co-ordination when performing surgery, setting bones or dressing wounds;
- finger dexterity to inoculate animals, or to use surgical instruments and laboratory equipment;
- physical ability to use firm but gentle handling techniques;
- good vision to detect irregularities when examining internal structures on X-ray films, or when performing laboratory tests;
- adaptability to conditions where there is a risk of animal bites, kicks or infectious diseases.

TRAINING AND ENTRY REQUIREMENTS

Veterinarians normally require:

- four to six years university program in veterinary medicine leading to the degree of doctor of veterinary medicine; and
- successful completion of provincial qualifying examinations.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Veterinarians are employed in a number of fields, with each field providing its own advantage or form of achievement, such as prestige, challenge, responsibility or higher salaries. The work field is often a matter of personal choice and if advancement possibilities do exist, they would depend on experience, initiative and dedication.

Transfer

Opportunities for transfer exist within the discipline to various fields of activity, such as private practice, government services, teaching, and private industry. Transfer possibilities also exist for veterinarians interested in animal research, such as 2133-198 PATHOLOGIST, ANIMAL.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to veterinarian occupations require significant interests in, and dispositions for work involving the following:

Interests

- scientific and technical work;
- activities concerned with animals.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example, using laboratory equipment to verify preliminary diagnosis;
- the evaluation of information against sensory or judgmental criteria;
- the precise attainment of set limits, tolerances or standards;
- dealing with people in actual job duties beyond giving and receiving instructions;
- a variety of duties often characterized by frequent change.

OTHER CLUES

One of the most important personal qualifications for a successful veterinarian is a sincere liking and respect for animals.

OSTEOPATHS AND CHIROPRACTORS

WORK PERFORMED

This chapter includes occupations concerned with diagnosing, and treating, mainly by manipulative methods, disorders of the skeletal, muscular structure and other tissue of the human body, and relieving malfunctions due to pressure upon the nervous system. Worker functions include: co-ordinating the treatment to be prescribed and administered on the basis of diagnosis; mentoring to advise and guide patients with regard to their ailment or disability; and manipulating the articulations, more especially those of the spinal column, to relieve disorders; and operating radiological, electro-therapy and thermotherapy equipment to assist in the diagnosis or treatment. Work activities include: diagnosing extent of disorders by examination and using diagnostic aids; adjusting position of displaced vertebrae or other articulations; treating disorders in the musculo-skeletal system and indirectly, in the circulatory and nervous systems, by manipulation; and prescribing corrective exercises and diet.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3117-110	CHIROPRACTOR (medical)	5	7	3117-114	OSTEOPATH (medical)	5	8

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>2</u>	<u>2</u>	2	<u>1</u>	<u>2</u>	2	2	<u>1</u>	<u>1</u>	4	4	L 4567	I	5	7	745	905Y
		3	<u>2</u>		3		<u>2</u>	<u>2</u>								

APTITUDES AND CAPACITIES

Osteopaths and Chiropractors require:

- learning ability to acquire a knowledge of medical sciences and analytical ability to diagnose the nature, origin and probable course of illness, injury or disorder;
- verbal ability to use medical terminology, and to communicate effectively with people;
- spatial perception to visualize the position and arrangement of organs, bone structures and body-tissue from X-ray photographs, thermography and knowledge of anatomy;
- form perception to see details in body structures and to observe physical indications of misalignment of bones, or damage to body organs or tissues;
- finger dexterity to feel bone alignment, to administer treatments and to use therapy equipment;
- manual dexterity to correct musculo-skeletal abnormalities;
- near visual acuity and accommodation for the detection of abnormalities and the examination of X-rays.

TRAINING AND ENTRY REQUIREMENTS

Chiropractors normally require:

- a four year program at an approved college of chiropractic leading to the degree of Doctor of Chiropractic; and
- completion of provincial licensing and registration requirements.

Osteopaths normally require:

- two to three years of study in a university, preferably in a science program;
- a four year program at a college of osteopathy leading to the degree of Doctor of Osteopathy;
- one to two years of internship at an approved osteopathic hospital; and
- completion of provincial licensing and registration requirements.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Most chiropractors and osteopaths are self-employed; therefore advancement possibilities are usually a matter of personal choice when deciding to enter private practice, medical research, teaching or administration.

Transfer

Similarly transfer is a matter of personal choice. However, transfers between the field of chiropractor, osteopathy and other medical disciplines are not possible.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- scientific and technical work;
- working for people for their presumed good as in the social welfare sense;
- work resulting in prestige or the esteem of others, such as the relieving of patient's discomfort and advice to good health.

Temperaments

- the evaluation of information against sensory or judgmental criteria as in diagnosing from patient's symptoms and medical history the treatment required especially those dealing with the musculo-skeletal and nervous systems of the human body;
- the evaluation of information against measurable or verifiable criteria;
- dealing with people in actual job duties beyond giving and receiving instructions;
- influencing people in their opinions, attitudes, or judgments about ideas or things.

GROUP 3119

HEALTH DIAGNOSING AND TREATING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with health diagnosis and treatments in fields such as naturopathic medicine and podiatry.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
3119-110	PODIATRIST (medical)	<u>2</u>	<u>2</u>	3	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	3	L 4567	I	5	7	745	095
3119-114	NATUROPATH (medical)	<u>2</u>	<u>2</u>	3	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	3	L 4567	I	5	7	745	095

SUPERVISORS, NURSING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with supervising and co-ordinating the activities of personnel engaged in nursing and related duties. Worker functions include: co-ordinating shift work of nursing staff and reporting on events; and supervising nursing staff by determining work procedures and assigning specific nursing duties. Work activities include: assisting in the planning and developing of policies and procedures dealing with nursing service; ensuring physicians' orders and procedures are followed; evaluating nursing staff performance; assisting in the training of nursing staff; and initiating procurement of supplies and equipment.

LIST OF OCCUPATIONAL TITLES

GED SVP

3130-110 NURSE, SUPERVISOR (medical) 5 7

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>3</u>	3	3	<u>3</u>	4	4	4	5	3		S 4567	I	5	7	265	450Y1

APTITUDES AND CAPACITIES

Nurse, Supervisors require:

- learning ability to understand and apply nursing principles and techniques, to comprehend policies, procedures and problems associated with nursing activities and supervision, and to assess training programs, working facilities and methods;
- verbal ability to communicate effectively, either orally or in writing, when directing, guiding, instructing and training nursing staff;

- numerical ability to order and account for drugs, equipment and supplies, or to assist in preparing budget;
- clerical perception to perceive pertinent detail in physicians' instructions and patients' records, and to avoid errors when requisitioning and accounting for drugs and supplies;
- near visual acuity to examine patients' records and administer drugs.

TRAINING AND ENTRY REQUIREMENTS

Nurse, Supervisors normally require:

- secondary school graduation at the university level with emphasis on sciences;
- completion of a two to three-year diploma program in nursing in a community college, or hospital school of nursing;

OR

- completion of a four-year degree program at a university school of nursing, leading to a Bachelor of Science in Nursing.

In some provinces, licensing and registration in a provincial association of nurses is mandatory.

One or more years of additional training are required for a specialization in, for example, public health, obstetrics or cardiology.

Nursing experience in which leadership and administrative skills and competency have been demonstrated is also normally needed.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Nurse, Supervisors who have the necessary experience and demonstrated abilities may progress to 1134-118 DIRECTOR, NURSING SERVICES; 1134-122 DIRECTOR, PUBLIC-HEALTH NURSING; and 2711-138 UNIVERSITY TEACHER, MEDICAL SCIENCES.

Transfer

Transfer for those with suitable qualifications may be to 2793-118 NURSING INSTRUCTOR in schools of nursing. However, transfers are usually limited between various nursing specialities, such as obstetrics or public health.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to Nurse, Supervisor occupations require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- dealing with people and communicating ideas;
- work resulting in prestige or esteem of others when teaching students or when handling administrative details.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances, or standards;
- a variety of duties often characterized by frequent change.

NURSES, GRADUATE, EXCEPT SUPERVISORS**WORK PERFORMED**

This chapter includes occupations concerned with assisting physicians, and giving nursing care to the sick, injured and infirm, in hospitals, clinics, schools, and industrial plants, and in private and nursing homes. Worker functions include: serving and attending to the needs of patients; manipulating body members and equipment while providing medical care; instructing individuals, families and others in first aid, nutrition, maternal and child care, and the prevention and control of diseases; compiling records on vital statistics, patients' condition, treatment given, and other items; and co-ordinating consultative nursing services to various establishments. Work activities include: advising establishments on policies, procedures and problems related to nursing activities; planning and administering school health programs; cleaning and sterilizing instruments and equipment; assisting with operations and deliveries; making beds; bathing and feeding patients; administering injections; dressing wounds; and providing other medical care as required.

LIST OF OCCUPATIONAL TITLES**A****GED SVP**

3131-110	NURSE CONSULTANT (medical)	5	7
----------	----------------------------	---	---

B**GED SVP**

3131-112	OUTPOST NURSE (medical)	5	7
3131-114	NURSE, SCHOOL (medical)	5	7

GED SVP

3131-118	NURSE, PUBLIC HEALTH (educ.; medical)	5	7
----------	--	---	---

C**GED SVP**

3131-122	NURSE, OCCUPATIONAL HEALTH (medical)	5	7
3131-126	NURSE, DOCTOR'S OFFICE OR CLINIC (medical)	5	7

GED SVP

3131-130	NURSE, GENERAL DUTY (medical)	4	7
3131-134	NURSE, PRIVATE DUTY (medical)	4	7
3131-138	PSYCHIATRIC NURSE (medical)	4	7

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 56	I	5	7	746	591
B	<u>2</u>	<u>2</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	3	4	3	M 34567	I-B 267	5	7	746	5Y018
C	<u>2</u>	<u>2</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	4	3	L-M 4567	I 7	5-4	7	47	5Y8
		<u>3</u>		4							4						

APTITUDES AND CAPACITIES

Graduate Nurses require:

- learning ability to understand and apply nursing principles and techniques, and to comprehend the policies, procedures and problems associated with nursing activities;
- verbal ability to understand the meaning of words and ideas associated with them, in order to comprehend medical terminology, follow doctors' prescriptions, and communicate effectively with administrators and medical personnel;

clerical perception to discern pertinent detail in doctors' prescriptions, and to maintain records on patients' conditions, treatment given and other significant factors.

Additionally, for Nurses in clusters B and C:

spatial perception to visualize body structure, respiratory, circulatory and nervous systems when providing patient care;

form perception to detect patients' condition and reaction to drugs and treatments or any significant change in patient's general appearance, such as spread of skin rash or inflammation in area of wound

or incision, and observing wave patterns on patient-monitoring equipment;

- finger dexterity to accurately manipulate hypodermic needles, blood-pressure gauges and other instruments;
- manual dexterity, and the capacity to extend the hands and arms in any direction, in order to bathe patients, dress wounds and perform other nursing duties;
- good health, and sufficient strength to perform light to medium work, requiring the lifting of equipment, the aiding of incapacitated patients, and frequent walking, standing and bending;
- near visual acuity to read instruments and to set dials on medical equipment, and colour discrimination to recognize certain disease symptoms;
- capacity to work while exposed to the usual odours and gases found in hospital environments;
- for occupation 3131-112 OUTPOST NURSE, the capacity to travel long distances in Canada's Northland in all types of weather, by aircraft, boat, dog sled or other available means of transportation, under conditions that are frequently hazardous.

TRAINING AND ENTRY REQUIREMENTS

Graduate Nurses usually require:

- twelve or thirteen years of general education, depending on the province, with credits in mathematics, chemistry, physics and biology;
- completion of a two- or three-year diploma program in nursing at a community college, or a hospital, regional or independent school of nursing; or
- completion of a four-year degree program at a university school of nursing, leading to a Bachelor of Science in Nursing.

In some provinces, licensing and registration in a provincial association of nurses is mandatory.

In addition to these minimum requirements, certain nursing occupations call for additional requisites, as follows:

- 3131-110 NURSE CONSULTANT normally requires a master's or Ph.D. degree in nursing, plus five to ten years of experience in, for example, supervision, teaching, research and administration.

3131-112 OUTPOST NURSE normally requires at least one year of graduate nursing experience, plus completion of a two-year program in Outpost Nursing or Advanced Obstetrics at a university school of nursing;

3131-114 NURSE, SCHOOL normally requires at least one year of graduate nursing experience before appointment;

3131-118 NURSE, PUBLIC HEALTH normally requires completion of a two-year program in Public Health Nursing at a university school of nursing;

3131-130 NURSE, GENERAL DUTY normally requires up to one year of additional training to work in clinical specializations, such as obstetrics, cardiology and psychiatry.

It should be noted that in the western provinces, 3131-138 PSYCHIATRIC NURSES are distinct from general duty nurses, and complete a two- or three-year diploma program at an approved school of psychiatric nursing, are registered as psychiatric nurses, and are provincially licensed.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Graduate Nurses in this chapter may advance to various supervisory, teaching, administrative or research positions in the field of nursing, depending on their experience and qualifications, such as 3130-110 NURSE, SUPERVISOR, 2711-138 UNIVERSITY TEACHER, MEDICAL SCIENCES, 2793-118 NURSING INSTRUCTOR, 1133-166 DIRECTOR, SCHOOL OF NURSING, 1134-118 DIRECTOR, NURSING SERVICES and 1134-122 DIRECTOR, PUBLIC-HEALTH NURSING.

Transfer

Because of basic similarities in work performed, many nurses could transfer from occupation to occupation within this chapter, for example, from 3131-130 NURSE, GENERAL DUTY to 3131-134 NURSE, PRIVATE DUTY or 3131-126 NURSE, DOCTOR'S OFFICE OR CLINIC. Transfer is also possible between various types of establishments, such as public hospitals and nursing homes; between clinical specializations, such as obstetrics and pediatrics; to service in the Canadian Armed Forces; or to service overseas.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- activities of a scientific and technical nature;
- working for people for their presumed good as in the social welfare sense.

Additionally for Nurses in A and B

- activities concerned with people and communication of ideas.

Temperaments

A

- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against judgmental criteria;
- a variety of duties often characterized by frequent change.

B

- dealing with people in actual job duties beyond giving and receiving instructions;
- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change;
- performing adequately under stress when confronted with the critical or unexpected.

C

- dealing with people in actual job duties beyond giving and receiving instructions;
- the precise attainment of set limits, tolerances or standards;
- performing adequately under stress when confronted with the critical or unexpected.

OTHER REQUIREMENTS

- Tact, patience and thoughtfulness in dealing with patients.

NURSING ASSISTANTS

WORK PERFORMED

This chapter includes occupations concerned with providing assistance to nursing staffs of hospitals, clinics and nursing homes, by performing routine services related to the care of patients. Worker functions include: attending to the needs of patients as directed by the nursing staff; and using body members to move patients, and give treatments as directed by nursing staff. Work activities include: providing personal services, such as bathing, shaving and dressing patients; serving nutrients, and feeding or assisting patients to feed themselves; taking and recording temperature, pulse and blood pressure; answering call bells; and directing visitors and answering their queries.

LIST OF OCCUPATIONAL TITLES

GED SVP

3134-110 NURSING ASSISTANT (medical) 3 5

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	<u>4</u>	4	4	<u>4</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	4	4	M 3467	I	3	5	41	518

APTITUDES AND CAPACITIES

Nursing Assistants require:

- ability to learn and use proper bedside manners and the techniques of patient care, and to understand directives;
- verbal ability to communicate with patients, nursing staff and to answer visitors queries;
- form perception to determine thermometer and blood pressure apparatus readings;
- clerical perception to read and correctly record data, such as temperature, pulse rate and blood pressure;

- eye-hand-finger co-ordination for activities, such as shaving and feeding patients and changing dressings;
- manual dexterity to massage patients and to give enemas;
- capacity for work involving frequent lifting of bed linens, food trays and nursing equipment, and moving patients into or out of beds and wheelchairs;
- capacity to work in stooping position and to reach to make beds, and lift and move patients.

TRAINING AND ENTRY REQUIREMENTS

Nursing Assistants normally require:

- nine to ten years of general education;

- an eight to twelve-month program of studies and practical experience, usually conducted by a provincial health department or in a hospital; and
- certification or registration in accordance with provincial regulations.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

This occupation is terminal since supervisory positions are held by registered graduate nurses only.

Transfer

Nursing Assistants who receive additional training may transfer to other wards within the hospital or to occupations such as, 3139-138 FIRST-AID ATTENDANT, or to 3139-142 HOMEMAKER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of Nursing Assistant require significant interests in, and dispositions for work involving the following:

Interests

- working for people for their presumed good as in the social welfare sense, or for dealing with people in social situations;
- dealing with things and objects.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- a variety of duties often characterized by frequent change;
- performing adequately under stress when confronted with the critical or unexpected.

NURSING AIDES AND ORDERLIES

WORK PERFORMED

This chapter includes occupations concerned with providing auxiliary services in the care of patients in establishments, such as hospitals, nursing homes and clinics. Worker functions include: attending to the personal needs of patients as directed by nursing and medical staff; and manipulating body members to set up equipment, such as oxygen tents and portable X-ray machines, and to lift patients onto and from beds. Work activities include: dressing and undressing patients; serving and collecting food trays; answering patients' call-bells; bathing, shaving, massaging or feeding patients; changing bed linen; taking and recording temperature, pulse and respiration rates; recording food and liquid intake and output; cleaning, sterilizing and storing treatment trays, instruments and other supplies; and transporting patients to and from treatment areas.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3135-110	NURSE AIDE (medical)	3	4	3135-114	ORDERLY (medical)	3	4

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>4</u>	4	4	4	<u>4</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	4	4		M 347	I	3	4	41	531
					4												

APTITUDES AND CAPACITIES

Nursing Aides and Orderlies require:

- learning ability to understand and apply patient-care techniques and to correctly carry out nurses' instructions;
- form perception to visually examine treatment trays, instruments and other supplies to determine if they are properly cleaned, and to recognize changes in patients' condition;
- clerical perception to read thermometer, and to record pertinent information, such as pulse, respiration rate, and food and liquid intake and output;
- eye-hand-finger co-ordination to make precise movements when bathing or shaving patients;

- manual dexterity to move the hands easily and skilfully when feeding patients or giving enemas;
- sufficient strength to set up oxygen tents and portable X-ray machines, and to move patients onto and from beds, wheelchairs or stretchers;
- agility to work in awkward positions, such as stooping and crouching, and physical ability to move the hands and arms in order to bathe patients, change bed linen, and transport patients in wheelchairs or on stretchers;
- near visual acuity to shave patients and to take and record patients' temperature.

TRAINING AND ENTRY REQUIREMENTS

Nursing Aides and Orderlies normally require:

- ten years of general education;
- a four to ten-month vocational school program, depending on the province, consisting of classroom and practical training; or
- one year of in-service hospital apprenticeship.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for Nursing Aides and Orderlies is limited to those who undertake further training to become a Registered Practical Nurse or Registered Nurse. Some opportunities also exist to supervisory positions.

Transfer

Nursing Aides and Orderlies may transfer out of the hospital setting to, for example, 3139-138 FIRST-AID ATTENDANT in industry or recreational and sports arenas, or to 3139-142 HOMEMAKER, or 3139-146 CHILD-CARE ATTENDANT, SCHOOL.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to Nursing Aides and Orderlies require significant interests in, and dispositions for work involving the following:

Interests

- working for people for their presumed good, as in the social welfare sense;
- dealing with things and objects.

Temperaments

- dealing with people in actual job duties beyond giving and receiving job instructions;
- routine, concrete and organized work;
- a variety of duties often characterized by frequent change.

PHYSIOTHERAPISTS, OCCUPATIONAL AND OTHER THERAPISTS

WORK PERFORMED

This chapter includes occupations concerned with the therapeutic treatment of physically handicapped, impaired or disabled persons, by physical and mechanical means. Worker functions include: administering and analyzing tests to determine extent of patients' impairments or disabilities, and treatment required; counselling and guiding individuals to adjust to their handicaps; instructing them in communication techniques, on the the use of crutches, braces and other devices; manipulating body members, or operating therapeutic equipment, to treat patients; and planning and co-ordinating remedial programs. Work activities include: assessing persons' aptitudes, capabilities, interests and other factors to determine therapy required; providing treatment using heat, water, light, sound, exercise, manual arts, speech or hearing training; conducting research into communication disorders; and acting as a consultant to educational, medical and other professional groups.

LIST OF OCCUPATIONAL TITLES

A							
		GED	SVP			GED	SVP
3137-110	AUDIOLOGIST (medical)	5	7	3137-114	SPEECH THERAPIST (medical)	5	7

B							
		GED	SVP			GED	SVP
3137-118	OCCUPATIONAL THERAPIST (medical)	4	7	3137-122	PHYSIOTHERAPIST (medical)	4	7

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	3	3	<u>2</u>	3	4	3	4	5	4	S 4567	I	5	7	745	90Y5
					<u>3</u>			4				S 567					
B	<u>2</u>	<u>2</u>	3	3	3	3	4	<u>3</u>	<u>3</u>	4	5	L 457	I	4	7	7645	5901
												L 345					

APTITUDES AND CAPACITIES

- Audiologists and Speech Therapists require:
- learning ability to understand, acquire, and apply the techniques of assessment and treatment of human communication disorders, and to perform related research;
 - verbal ability to communicate effectively with patients, families and other personnel, to understand and use the terminology associated with communication therapy, and a knowledge of language to recognize and correct language and speech impairments;
 - form perception to take accurate readings from electroacoustic and other test instruments, and to observe formation of mouth and position of tongue during speech, and facial structure to detect abnormalities which might cause speech irregularities.

- Occupational Therapists and Physiotherapists require:
- learning ability to understand, acquire and apply rehabilitation techniques, and to assess patient's aptitudes, capabilities, interests and environmental conditions to plan suitable therapy program;
 - verbal ability to communicate effectively with patient, families and other professional personnel, and to understand and use the terminology associated with occupational and physiotherapy;
 - manual and finger dexterity to massage muscles, give corrective exercises, operate therapeutic equipment and demonstrate creative or manual skills.

TRAINING AND ENTRY REQUIREMENTS

- Audiologists and Speech Therapists normally require:
- completion of a bachelor's degree program in the social sciences or humanities, followed by two years of post-graduate university study

- in audiology and speech therapy leading to a diploma or master's degree; or,
- completion of a four-year university undergraduate program in speech and hearing science leading to a bachelor's degree.

A period of internship and clinical experience is usually included in the above mentioned training programs.

In some provinces, registered membership in a provincial speech and hearing association in order to practice is required.

Occupational Therapists and Physiotherapists normally require:

- completion of a two or three-year diploma program in physiotherapy and/or occupational therapy at a university; or,
- completion of a four year bachelor's degree program in physiotherapy and/or occupational therapy at some universities;

AND

a period of internship and clinical experience during or after the above mentioned programs.

In some provinces, registered membership in a provincial or national association of physiotherapy or occupational therapy in order to practice is required.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Audiologists and Speech Therapists

Advancement

Audiologists and Speech Therapists who display a potential for supervision and leadership could be promoted to responsible positions, such as unit supervisor or department head. Some workers could enter private practice or advance to positions involving research or teaching activities.

Transfer

Because Audiologists and Speech Therapists normally follow similar courses of training, people in one discipline may be able to transfer to the other discipline with some further training; registration and approval by the regulating authority.

Occupational Therapists and Physiotherapists

Advancement

Occupational Therapists and Physiotherapists who display a potential for supervision and training could be promoted to positions, such as unit supervisor or department head. Some workers could enter private practice, or advance to research or teaching positions in hospitals, universities or community health agencies.

Transfer

Those persons who have completed a program in both occupational therapy and physiotherapy, may be able to transfer from one discipline to another, with additional training, registration and approval by the regulating authority.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to therapist occupations require significant interests in, and dispositions for work involving the following:

Audiologists and Speech Therapists

Interests

- activities of a scientific and technical nature;
- working for people for their presumed good as in the social welfare sense;
- activities resulting in prestige or the esteem of others.

Temperaments

- evaluation of information against judgmental criteria as when evaluating nature and degree of patient's impairment;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- dealing with people in actual job duties, such as providing consultation and advice.

Occupational Therapists and Physiotherapists

Interests

- activities of a scientific and technical nature;
- situations involving a preference for activities concerned with people and communications of ideas;
- dealing with people for their presumed good as in the social welfare sense;
- activities resulting in prestige or the esteem of others.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions, such as encouraging patients' participation in group programs;
- the evaluation of information against sensory or judgmental criteria; the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change and requiring adjustment to the varying needs of individual patients.

OTHER REQUIREMENTS

- good health, tact, empathy and patience;
- ability to achieve rapport with physically disabled and mentally ill patients;
- in addition, Audiologists and Speech Therapists should have excellent hearing and be free of any speech or language handicap.

GROUP 3139

NURSING, THERAPY AND RELATED ASSISTING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with assisting surgical teams; providing manual arts or recreational therapy programs; providing remedial services for patients with hearing disorders; giving first-aid to the sick and injured; assisting as a member of an ambulance team; caring for handicapped children in school, and for persons in private homes in support of a medical team.

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
3139-110	SURGICAL ASSISTANT (medical)	<u>3</u>	3	4	4	4	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M 467	I	4	6	43	3Y
3139-114	RECREATIONAL THERAPIST (medical)	<u>3</u>	<u>3</u>	4	3	3	<u>3</u>	4	4	4	4	5	L 4	B	4	5	46	451
3139-118	MANUAL-ARTS THERAPIST (medical)	<u>3</u>	<u>3</u>	4	3	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 4567	I 5	3	6	46	451
3139-122	AUDIOLOGY TECHNICIAN (medical)	<u>3</u>	<u>3</u>	3	4	4	3	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 4567	I	4	4	49	50
3139-126	OCCUPATIONAL-THERAPY AIDE (medical)	<u>3</u>	<u>3</u>	4	<u>3</u>	4	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	L 47	I	3	5	46	51
3139-130	AMBULANCE ATTENDANT (medical)	<u>3</u>	4	4	<u>4</u>	4	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	VH 347	B 5	3	4	43	58
3139-134	ATTENDANT, PHYSICAL THERAPY (medical)	3	4	4	<u>3</u>	4	4	4	<u>3</u>	<u>3</u>	4	4	M 347	I	3	4	43	53
3139-138	FIRST-AID ATTENDANT (medical)	<u>4</u>	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 347	B	3	3	4	58
3139-142	HOMEMAKER (medical)	<u>4</u>	<u>4</u>	4	4	4	4	<u>3</u>	<u>4</u>	<u>3</u>	4	4	M 34	I	3	3	4	53
3139-146	CHILD-CARE ATTENDANT, SCHOOL (medical)	<u>4</u>	<u>4</u>	4	4	4	4	4	4	<u>4</u>	4	5	M 347	I	2	2	34	51

PHARMACISTS

WORK PERFORMED

This chapter includes occupations concerned with compounding and dispensing pharmaceuticals and related preparations, and developing new medicinal substances. Worker functions include: working with precision to weigh, measure and mix drugs and other medicinal compounds according to physicians' prescription; and synthesizing data obtained from laboratory tests to determine purity, identity and strength of drugs, and to assist in the development of new drugs. Work activities include: bottling, labelling and packaging prepared compounds; keeping inventory of all pharmaceuticals issued and returned; maintaining control records of narcotics and poisons, and drugs dispensed; assisting with the design, development and testing of suitable equipment for the production of new products; developing legally-recognized standards for drugs used in the preparation of pharmaceuticals; and determining the most suitable containers for medicinal substances.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

3151-114 PHARMACIST, INDUSTRIAL
(prof. & tech., n.e.c.)

6* 8

B

GED SVP

3151-110 PHARMACIST, HOSPITAL
(prof. & tech., n.e.c.)

5 8

3151-118 PHARMACIST, RETAIL
(prof. & tech., n.e.c.)

GED SVP

5 8

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>1</u>	<u>1</u>	<u>1</u>	3	<u>2</u>	<u>3</u>	3	<u>3</u>	3	5	<u>3</u>	L 4567	I	6	8	71	0Y95	
B	<u>2</u>	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>3</u>	3	<u>3</u>	3	5	<u>3</u>	L 4567	I	5	8	71	0Y5	

APTITUDES AND CAPACITIES

Pharmacists require:

- learning ability to understand and apply the underlying principles and methods concerned with pharmaceuticals, and the basic physical and biological sciences concerned with the application and effects of drugs;
- verbal ability to give information and advice concerning uses and effects of drugs and medicines including incompatibility of drugs, warnings and contra-indications;
- numerical ability to work with advanced mathematics, derive formulae when developing new products and improving existing ones, and to ensure that proper dosages have been prescribed;
- form perception to make visual comparisons and discriminations

when preparing pharmaceutical compounds by physical and chemical procedures;

- clerical ability to accurately maintain control records of narcotics, poisons and prescriptions, to label prepared compounds, and to read instructions correctly when filling prescriptions;
- finger dexterity to quickly and accurately manipulate small objects such as capsules when filling them with ingredients, using dispensing equipment, and when employing test equipment to analyze drugs;
- ability to speak to doctors and customers and to receive prescription orders in person and by telephone;
- near visual acuity to read dials and gauges on dispensing and laboratory-test equipment, and colour vision to recognize drugs in tablet or capsule form.

TRAINING AND ENTRY REQUIREMENTS

Pharmacists normally require:

- a four year university program in pharmacy leading to the degree of Bachelor of Science in Pharmacy — B.Sc. Pharm. or B.S.P.;

- a practical training period of from thirty days to eighteen months, as specified by provincial regulations, in a retail or hospital pharmacy under the supervision of a registered pharmacist; and

- pass a qualifying examination with the appropriate provincial licensing body which confers the right to practice.

Pharmacists, Industrial also normally require:

- additional post-graduate training in research and development techniques.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Pharmacists with managerial ability may advance to 1131-122 MANAGER, LIFE SCIENCES PROGRAM and those who take post-graduate studies leading to a Master of Science or Doctorate degree may advance to occupations, such as 2711-138 UNIVERSITY TEACHER, MEDICAL SCIENCES, or 2133-210 PHARMACOLOGIST. Pharmacists who have a sound knowledge of business practices find satisfaction and good income through self-employment.

Transfer

Although Pharmacists generally remain in their chosen field, those who have particular abilities may transfer to occupations in sales and government or industry inspecting, such as 5133-114 PHARMACEUTICAL REPRESENTATIVE; 1116-158 INSPECTOR, HEALTH STANDARDS; or 8296-110 INSPECTOR, PHARMACEUTICALS AND TOILETRIES.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to pharmacist occupations require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria, to arrive at decisions, such as testing and analyzing drugs to determine their identity, purity and strength;
- the precise attainment of set limits, tolerances, or standards;
- dealing with people in actual job duties beyond giving and receiving instructions.

Additionally, for Pharmacist, Industrial:

- the evaluation of information against sensory or judgmental criteria, to arrive at decisions, such as evaluating and controlling the labeling, packaging and advertising of pharmaceutical products.

DIETITIANS AND NUTRITIONISTS

WORK PERFORMED

This chapter includes occupations concerned with conducting nutritional research programs, providing advice on food-service management and group feeding, and planning and directing the preparation and serving of meals by applying the principles of nutrition and dietetics. Worker functions include: synthesizing data obtained from extensive experimentation on individual foods and on methods of food processing, and applying the results to human nutrition; co-ordinating activities of food-service programs in hospitals, schools, hotels and other establishments to ensure proper nutrition; instructing individuals or groups in the application of the principles of nutrition and diet therapy; supervising and training workers engaged in preparing and serving meals; and skilfully using precision-measuring instruments and other laboratory equipment. Work activities include: participating in research, giving consultative services, advising individuals and groups, lecturing on nutrition and dietetics, and planning regular and special diet menus.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP
3152-110	RESEARCH NUTRITIONIST (prof. & tech., n.e.c.)	6*	8*

B

		GED	SVP			GED	SVP
3152-114	DIETARY CONSULTANT (prof. & tech., n.e.c.)	5	7	3152-122	DIETITIAN (prof. & tech., n.e.c.)	5	7
3152-118	NUTRITIONIST (prof. & tech., n.e.c.)	5	7	3152-126	DIETITIAN, THERAPEUTIC (medical; prof., & tech., n.e.c.)	5	7

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>1</u> <u>2</u>	<u>2</u>	<u>2</u>	3	<u>3</u>	<u>3</u>	4	4	4	5	4	L 7	I	5	7	781	0Y91	
B	<u>2</u>	<u>2</u>	<u>2</u>	3	3	<u>3</u>	4	4	4	5	4	L 567	I	5	7	672	09541	

APTITUDES AND CAPACITIES

Dietitians and Nutritionists require:

- learning ability to understand and apply the principles of dietetics and nutrition, and the ability to plan, organize, supervise and co-ordinate operational activities or conduct research studies on nutrition and diet;
- verbal ability to understand and use a technical vocabulary and to communicate effectively when instructing or advising people;
- numerical ability to accurately calculate food costs and nutritional requirements, when planning menus and budgets, or conducting research studies;

- clerical perception to discern pertinent detail in narrative and tabular material, and to avoid perceptual errors in mathematical computations when measuring food quantities, recording results of tests, or preparing reports;
- good visual acuity and colour vision to observe the preparation and presentation of foodstuffs.

Research Nutritionists also require:

- form perception to discern pertinent details in objects when conducting tests on individual foods and on methods of food processing.

TRAINING AND ENTRY REQUIREMENTS

Research Nutritionists normally require:

- a master of science degree in food sciences, food chemistry or a

related specialization, for those engaged in programs of applied research; or

- a Ph. D. degree, for those engaged in programs of pure research.

Dietitians and Nutritionists in Cluster B normally require:

- a bachelor of science degree with specialization in nutrition and dietetics;
- one year of internship in a hospital or commercial establishment approved by the Canadian Dietetic Association.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Dietitians and Nutritionists who have demonstrated leadership and organizational ability may advance to 1134-110 DIRECTOR OF DIETETICS.

Transfer

Dietitians and Nutritionists may transfer to related work within their own field or to specific areas in teaching public-health and home-care programs where their knowledge of dietetics and nutrition could be utilized.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupations of nutritionist or dietitian require significant interests in, and dispositions for work involving the following:

Research Nutritionist

Interests

- scientific and technical work;
- abstract and creative work as reflected in research activities;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as data derived through research;
- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against sensory or judgmental criteria, such as determining applications of research studies and performing research to improve food palatability and appearance;
- a variety of duties characterized by frequent change.

Dieticians and Nutritionists in Cluster B

Interests

- dealing with people and the communication of ideas;
- scientific and technical work;
- business contact with people.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as evaluating diet needs and requirements and utilizing nutritional data;
- the evaluation of information against sensory or judgmental criteria, such as detecting, analyzing and resolving food-service problems;
- dealing with people in actual job duties, beyond giving and receiving instructions, such as advising health and other agencies on food programs and improvements, and conducting in-service course on nutrition;
- the direction, control and planning of an entire activity or the activities of others;
- a variety of duties often characterized by frequent change.

OPTOMETRISTS

WORK PERFORMED

This chapter includes occupations concerned with conserving, improving and correcting human vision by prescribing eyeglasses, contact lenses, eye exercises, and with other eye and vision-care procedures that do not require drugs or surgery. Worker functions include: determining visual efficiency and prescribing appropriate vision care; counselling patient on use and care of eyeglasses and contact lenses, visual hygiene, lighting, working distances and safety factors; and manipulating measuring instruments and small hand tools when assembling, fitting or adjusting eyeglasses for patients. Work activities include: examining patients' eyes, using specialized ophthalmic instruments to locate and measure defects in vision; referring patients to medical practitioners if signs of ocular disease are detected; and verifying finished lenses for conformity to prescriptions.

LIST OF OCCUPATIONAL TITLES

	GED	SVP
3153-110 OPTOMETRIST (medical)	5	7

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	3	3	3	3	5	<u>2</u>		S 47	I	5	7	47	0Y5

APTITUDES AND CAPACITIES

Optometrists require:

- learning ability to understand and apply knowledge and techniques required for the conservation and correction of vision;
- verbal ability to comprehend language and terminology of optometry, prepare prescriptions for eyeglasses, describe eye and vision care, and communicate effectively with patients of all ages;
- numerical ability for the study of mathematics and physics basic to an understanding of optics;
- spatial perception to visualize objects in two or three dimensions, reflected in use of optometric instruments or combining lenses of various strengths to determine correction required for the patient;

- form perception to detect abnormalities or presence of disease in the eyes, optic nerves or surrounding areas;
- finger dexterity to quickly and accurately manipulate small objects and instruments, or when demonstrating the method of insertion, removal and care of contact lenses;
- colour discrimination to recognize differences or shadings of colour during internal or external eye examinations and to obtain clues to vision problems;
- ability to reach for and handle measuring equipment during examinations of patients' eyes;
- near-visual acuity, depth perception and accommodation to examine and detect minute abnormalities and irregularities of the eyes and their adnexa, and in fit of glasses.

TRAINING AND ENTRY REQUIREMENTS

Optometrists normally require:

- graduation from an approved university optometry course of three to five years duration; and
- successful completion of a provincial qualifying examination.

The particular requirements for examinations, licensing and registration to practise optometry are provincially controlled and they vary from province to province.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for optometrists in general practice may come through formation of a business arrangement, such as a partnership or enlargement of the establishment, or through entry into clinical practice.

Transfer

Transfer possibilities are limited because of the nature of the work, but some optometrists who have particular abilities, may transfer to work in public health, education, or research, or become consultants on visual matters to public or industrial organizations.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of optometrist require significant interests in, and dispositions for work involving the following:

Interests

- working with people to improve their vision, health and work efficiency;
- activities of a scientific and technical nature, such as those involved in the practice of optometry and eye-care.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as are required to make decisions based on optometric information;
- the precise attainment of set limits or standards obtained by using precision instruments, such as ophthalmoscopes, retinoscopes and tonometers;
- dealing with people, beyond giving and receiving instructions, such as advising patients concerning the use of glasses and care of eyes to ensure satisfaction and comfort.

DISPENSING OPTICIANS

WORK PERFORMED

This chapter includes occupations concerned with fitting eyeglasses and contact lenses to customers, according to prescriptions of ophthalmologists or optometrists. Worker functions include: compiling data regarding the wearer's physical appearance, fitting requirements, and optical and vocational needs; discussing characteristics of eyeglasses with customers; working to close tolerances when taking pupillary and facial measurements, and marking lenses for edging and assembly; and manipulating tools to cut and edge lenses, and assemble eyeglass frames. Work activities include: assisting customers with selection of frames of the most suitable size, shape and colour; examining finished spectacles for defects; adjusting eyeglass frames to fit wearer; fitting contact lenses; and advising wearers concerning their use and care.

LIST OF OCCUPATIONAL TITLES

GED SVP

3154-110 DISPENSING OPTICIAN
(medical; ret. trade)

4 7*

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>2</u>	3	5	4		L 47	I	4	7	902	Y051

APTITUDES AND CAPACITIES

Dispensing Opticians require:

- learning ability to acquire a knowledge of optics, to understand optical prescriptions, and reasoning ability to apply the information and provide vision aids that meet the needs of customers;
- verbal ability to discuss requirements and desires of customers and to advise them in selection of suitable lenses and frames;
- spatial perception to determine where the lenses should be in relation to the eye pupils, and to visualize the functioning of fitted spectacles and contact lenses;
- form perception to observe scratches, chips, looseness or incorrect

alignment when examining eyeglasses for defects, and to verify that prescription specifications are met;

- ability to co-ordinate the eyes, hands and fingers rapidly and precisely, and finger dexterity to manipulate small tools and objects when assembling eyeglasses and fitting them to customers, or while demonstrating use and care of contact lenses;
- capacity to extend arms and work with hands when measuring and fitting eyeglasses;
- colour discrimination to advise customers on selection of appropriate colour of frames;
- near-visual acuity and depth perception to observe defects, assemble small parts and accurately fit spectacles for customers.

TRAINING AND ENTRY REQUIREMENTS

Dispensing Opticians normally require:

- a minimum of twelve years of general education; and
- three to four years of on-the-job training, under the guidance of a licensed optician.

Requirements for licensing and registration vary widely from province to province.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Dispensing Opticians who have knowledge of business practices may open their own ophthalmic dispensing businesses.

Transfer

Dispensing Opticians have limited transfer possibilities because of the specialized nature of their work; however, they may transfer to 8373-210 OPTICIAN, or to some occupations in Chapter 8376 INSPECTING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING. Some dispensing opticians may, with additional training, become sales or technical representatives for ophthalmic or optical goods suppliers.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of Dispensing Optician require significant interests in, and dispositions for work involving the following:

Interests

- work which is carried on in relation to processes, machines and techniques;
- activities leading to satisfaction from tangible results, such as assembling lenses and frames to make spectacles, and fitting or adjusting them to meet needs of customers;
- situations involving business contact with people.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, as in examining and checking finished lenses to ensure conformity with prescriptions;
- dealing with people in actual job duties beyond giving and receiving instructions;
- performing a variety of duties characterized by frequent change.

RADIOLOGICAL TECHNOLOGISTS AND TECHNICIANS

WORK PERFORMED

This chapter includes occupations concerned with the diagnostic or therapeutic application of radiant energy from X-rays and radioactive materials. Worker functions include: skilfully using X-ray machines, electrosopes, scintillation-and-position scanners, cobalt machines and other equipment to diagnose or treat diseases, injuries and abnormalities, under the supervision of a radiologist or other medical specialist; compiling information regarding diagnostic or therapeutic procedures to be undertaken on patients, and planning activities accordingly. Work activities include: preparing drugs, chemical solutions or radioactive isotopes to be administered by physicians; positioning patients and protecting unaffected body areas; setting-up and adjusting equipment; operating radioisotope scanning equipment to produce photographic records or images of irradiated areas; operating equipment to take and process radiographs used in diagnosis of illnesses or injuries; and operating equipment to treat diseases by means of ionizing radiations such as X-rays, radium and radioactive cobalt.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3155-110	NUCLEAR-MEDICINE TECHNOLOGIST (medical)	5	7	3155-114	DIAGNOSTIC-RADIOLOGICAL TECHNICIAN (medical)	4	6
				3155-118	RADIOTHERAPY TECHNICIAN (medical)	4	6

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	3	5	4	M 467	I	5-4	7-6	79	50Y1	
<u>2</u>	<u>2</u>	<u>2</u>		<u>2</u>												50Y	

APTITUDES AND CAPACITIES

Radiological Technologists and Technicians require:

- learning ability to complete such courses as anatomy, pathology, physiology and physics, to understand the underlying principles of radiography, radiotherapy or nuclear medicine, and to operate diagnostic or therapeutic equipment;
- verbal ability to understand and use the terminology of the science of radiology, to communicate orally with patients, physicians and other medical personnel in order to give and receive information or instructions, and to write clear and accurate technical reports;
- numerical ability to make mathematical calculations quickly and accurately for a particular treatment plan, to ascertain the amount of radiation reaching a particular body area, and to determine blood volume and red-cell survival during radioisotope studies;

- spatial perception to visualize body structures in order to place the patient in the position that affords the best view of the affected area, or the best angle for radiation treatment;
- form perception to examine developed films for over or under exposure, movement on part of patient, or processing defects;
- eye-hand-co-ordination to operate equipment, and to lift and move patients;
- finger dexterity to set-up, adjust, and operate equipment;
- capacity to perform medium work, requiring the lifting and positioning of equipment and patients, and the ability to stand for long periods of time;
- near-visual acuity to set-up equipment, to adjust and operate controls, and to study developed films.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- a two to three-year program of studies at a community college,

- institute of technology or hospital school, depending on the radiological techniques studied; and
- completion of qualification examination of the Canadian Society of Radiological Technicians.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Radiological technicians may qualify in more than one radiological discipline by taking an additional year of training in the discipline at an approved school. In addition, technicians who have a potential for supervising, leadership or instructing, may advance to positions such as chief technician, senior technician or instructor.

Transfer

Related employment possibilities may exist in industrial radiography occupations found in Group 9916, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, N.E.C., depending on the nature of the employer's requirements.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities of a scientific and technical nature, such as producing radiographs, and treating diseases, using ionizing radiations;
- work that is basically non-social in nature, and is carried on in relation to processes, machines and techniques such as radiography and radiotherapy.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions, such as reassuring patients, and positioning them for examination or treatment;
- the evaluation of information against measurable or verifiable criteria; for example, examining films for defects or setting controls on equipment according to specifications;
- the precise attainment of strict limits, tolerances or standards.

OTHER CLUES AND REQUIREMENTS**Other Clues**

- knowledge of photography, first-aid or home nursing may indicate an inclination on the part of the applicant for this type of work and could prove to be a definite asset.

Other Requirements

- tact, sympathy, patience and thoughtfulness to deal with various types of patients;
- meticulous work habits and exactness for small details;
- good physical and mental health.

MEDICAL LABORATORY TECHNOLOGISTS AND TECHNICIANS

WORK PERFORMED

This chapter includes occupations concerned with carrying out technological and technical functions in a medical specialization, such as haematology, histology, medical mycology, or parasitology or serology, to obtain data for use in the diagnosis, treatment and control of diseases. Worker functions include: analyzing test results for use in the diagnosis, treatment and control of diseases; compiling data obtained through examination and analysis of plant and animal cells; and preparing, examining and testing specimen samples, using a variety of laboratory equipment and techniques. Work activities include: determining bleeding or coagulation time and blood type; isolating substances in body fluids; growing microbes in artificial media, and studying their effect on human tissue; conducting laboratory tests and experiments to find ways to eliminate microbes and restore damaged tissue; and to develop vaccines and antibiotics.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
3156-110	BIOCHEMISTRY TECHNOLOGIST (medical; prof. & tech., n.e.c.)	5	7	3156-118	HISTOLOGY TECHNOLOGIST (medical)	5	7
3156-114	CYTOTECHNOLOGIST (medical; prof. & tech., n.e.c.)	5	7	3156-122	MEDICAL-LABORATORY TECHNOLOGIST (medical)	5	7
				3156-126	MICROBIOLOGY TECHNOLOGIST (medical; prof. & tech., n.e.c.)	5	7

B

		GED	SVP			GED	SVP
3156-130	LABORATORY TECHNICIAN, VETERINARY (prof. & tech., n.e.c.)	5	6	3156-134	MEDICAL-LABORATORY TECHNICIAN (medical)	4	5

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	<u>2</u>	3	<u>2</u>	3	3	<u>3</u>	3	5	<u>3</u>	L 47	I	5	7	791	0Y1
B	<u>2</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	3	3	<u>3</u>	3	5	<u>3</u>	L 47	I	5-4	6-5	791	0Y1

APTITUDES AND CAPACITIES

Medical Laboratory Technologists and Technicians require:

- learning ability to understand and acquire scientific background knowledge in an area of medical specialization, and to apply scientific principles involved in technical and technological laboratory practices in that area;
- verbal ability to understand and use the scientific terminology associated with an area of medical specialization;
- numerical ability to make calculations involved in laboratory experimentation and tests;

- form perception to make accurate observations during laboratory experiments and tests, to discern abnormalities in body specimens, and to take precise readings from laboratory instruments;
- finger dexterity to handle precision instruments;
- colour discrimination to recognize stains in slides, and to note colour changes and variations during laboratory test procedures;
- capacity to handle, finger and feel objects, materials and scientific instruments;
- near visual acuity to discern details when using microscope or making other observations.

TRAINING AND ENTRY REQUIREMENTS

Medical Laboratory Technologists normally require:

- graduation from secondary school at the university entrance level;
- completion of a three to four year program in a community college or university, including practical training at an approved laboratory.

Medical Laboratory Technicians normally require:

- eleven to thirteen years of progressive education depending on the specific vocation; and
- completion of a two-part course in theory and practice of up to two years, offered at institutes of technology and selected training centres in hospital and medical laboratories.

ADVANCEMENT AND TRANSFER POSSIBILITIES

A

Advancement

Career advancement depends on education, experience and demonstrated ability. Medical Laboratory Technologists may advance to senior positions by qualifying for advanced certification in general technology or in a specialized area.

Transfer

Medical Laboratory Technologists may transfer to other clinical technology departments or to other departments of hospital specialization. Providing the university degree requirements accompany the technological experience there are possibilities of transfer to teaching and research occupations.

B

Advancement

Medical Laboratory Technicians who perform limited duties but possess the acceptable academic qualifications may obtain the additional training required for advancement. Through examination for certification and registration of qualifications which signifies competency in a wider area of laboratory techniques, they may advance to medical laboratory technologist occupations.

Transfer

Because of the nature of training and experience in the medical specialization, transfers would normally be to other medical laboratory department specialties or other medical-technologist support activities.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- scientific and technical activities;
- non-social work carried on in relation to processes and laboratory techniques;
- dealing with things and objects.

Temperaments

- evaluation of information against measurable or verifiable criteria, such as studying slides of cell samplings to detect signs of disease;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

DENTAL HYGIENISTS, ASSISTANTS AND TECHNICIANS

WORK PERFORMED

This chapter includes occupations concerned with supportive work in the field of dentistry. Worker functions include: analyzing prescriptions or specifications to determine individual patient's requirements; precision working to close tolerances when fabricating dental appliances; manipulating tools and equipment to form, polish or finish appliances; comparing resultant products to specifications; supervising and co-ordinating the activities of a dental laboratory; and instructing groups or individuals in oral hygiene. Work activities include: preventing oral diseases by prophylactic treatments; making and repairing dentures, bite blocks, tooth bands, positioners and similar appliances; and assisting dentists during dental procedures.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

3157-110 DENTAL HYGIENIST (medical)

4 6

B

GED SVP

3157-114 DENTAL ASSISTANT (medical)

3 5

C

GED SVP

3157-134 MANAGING SUPERVISOR,
DENTAL LABORATORY
(scient. & ind. equip., n.e.c.)

4* 8*

D

GED SVP

3157-138 DENTAL TECHNICIAN, GENERAL
(scient. & ind. equip., n.e.c.)

4 7

3157-142 DENTAL CERAMIST
(scient. & ind. equip., n.e.c.)

4 7

3157-146 DENTAL TECHNICIAN, CROWN
AND BRIDGE
(scient. & ind. equip., n.e.c.)

4 7

GED SVP

3157-150 DENTAL TECHNICIAN, METAL
(scient. & ind. equip., n.e.c.)

4 7

3157-154 ORTHODONTIC TECHNICIAN
(scient. & ind. equip., n.e.c.)

4 7

E

GED SVP

3157-158 SET-UP MAN, DENTURE
(scient. & ind. equip., n.e.c.)

3 7

3157-162 FRAMEWORK FINISHER,
DENTURES
(scient. & ind. equip., n.e.c.)

3 6

3157-166 MOULDER, BENCH
(scient. & ind. equip., n.e.c.)

3 6

3157-170 ORTHODONTIC-BAND MAKER
(scient. & ind. equip., n.e.c.)

3 6

3157-174 CASTER AND MOULDER, DENTAL
CERAMICS
(scient. & ind. equip., n.e.c.)

3 5

GED SVP

3157-178 DENTURE PACKER
(scient. & ind. equip., n.e.c.)

3 5

3157-182 PLASTERMAN, DENTURES
(scient. & ind. equip., n.e.c.)

3 5

3157-186 BITE-BLOCK MAN
(scient. & ind. equip., n.e.c.)

3 4

3157-190 DENTURE FINISHER
(scient. & ind. equip., n.e.c.)

3 4

3157-194 DENTURE WAXER
(scient. & ind. equip., n.e.c.)

3 4

3157-198 DENTURE WAXER, METAL
FRAMEWORK
(scient. & ind. equip., n.e.c.)

3 4

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	3	<u>2</u>	<u>3</u>	<u>3</u>	5	3	L 4567	I	4	6	76	5Y
B	<u>3</u>	<u>3</u>	3	4	3	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 4567	I	3	5	21	53Y
C	<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 47	I	4	8	259	4509
D	<u>3</u>	3	3	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	5	<u>3</u>	L 47	I	4	7	901	0Y1
			4					<u>3</u>			<u>2</u>						
E	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S-L 47	I	3	7-4	91	Y0
	4			<u>2</u>	<u>2</u>	5					3						Y02

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply dental hygiene techniques for the prevention of oral diseases;
- verbal ability to understand the terminology associated with dental hygiene, and to communicate effectively with individuals and groups;
- spatial perception to visualize the normal function and structure of teeth and mouth;
- form perception to detect dental defects during primary examination of patients;
- eye-hand-finger co-ordination and finger and manual dexterity to manipulate dental instruments skilfully during treatment.

B

- learning ability to understand and follow dentist's instructions when assisting in the care and treatment of patients;
- verbal ability to understand dental terminology;
- eye-hand-finger co-ordination and finger and manual dexterity to handle instruments, prepare filling materials and give emergency treatment to patients;
- near visual acuity and depth perception to read scales and use hand tools during preparation of filling materials.

C

- learning ability to understand and apply management concepts and practices for the efficient operation of a dental laboratory;
- verbal ability to understand dental laboratory terminology, and to communicate effectively with persons at all levels;
- numerical ability to prepare budget estimates and to review financial statements;
- clerical perception to discern pertinent detail and detect errors in correspondence, inventory records or other written or tabular material.

D and E

- learning ability to understand and apply appropriate techniques for the fabrication and repair of dental appliances;
- spatial perception to visualize three-dimensional shape of dental appliances from prescriptions or specifications;
- form perception to examine finished work for conformance to specifications;
- eye-hand-finger co-ordination and finger and manual dexterity to skilfully use laboratory equipment and tools to fabricate dental appliances.

In addition, Dental Technicians in D require colour discrimination to select and match shades of teeth and gums.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- graduation from high school at the university entrance level; and
- a two-year university program leading to the diploma — Dental Hygienist.

B

- eleven to twelve years of general education; and
- up to six months of full or part-time training at a vocational institute, or classes organized by local dentists; or
- six months to one year on-the-job training.

Some provincial dental associations require successful completion of a test before an examining board to qualify for the diploma — Dental Assistant.

C

- ten to twelve years of general education;

AND

- a three-year course of full-time lectures and practical laboratory work in an institute of technology; or

AND

- a four-year apprenticeship program under the supervision of a recognized Dental Technician;

- from four to ten years experience as a Dental Technician.

D

- ten to twelve years of general education;

AND

- a three-year course of full-time lectures and practical laboratory work in an institute of technology; or
- a four-year apprenticeship program under the direction of a recognized Dental Technician.

Examinations for registration and licensing as Dental Technician is required in most provinces.

E

- nine to ten years of general education; and
- three months to three years of on-the-job training depending on the complexity of the work.

ADVANCEMENT AND TRANSFER POSSIBILITIES

A

Advancement

Dental Hygienists normally work for dentists with large practices or for a group of dentists. Opportunities for advancement to supervisory positions are possible for those employed in school systems or government services.

Transfer

Dental Hygienists may transfer between private practices of dentists or groups of dentists and school systems or government services branches.

B

Advancement

Because of the nature of the work, advancement is usually restricted to a matter of salary increases based on experience with the employer's practice.

Transfer

Transfers are possible between employment with dental specialists or in school or hospital clinics.

C

Advancement

Managing Supervisors, Dental Laboratory, with initiative and who have acquired the necessary business knowledge may become self employed as proprietor or partner of a dental laboratory.

Transfer

Transfer possibilities are limited to similar positions in other dental laboratories.

D

Advancement

Dental Technicians who have supervisory potential, leadership qualities and considerable experience may advance to positions as supervisors or proprietors. Opportunities exist for advancement in large laboratories with highly specialized production. Smaller laboratories provide exposure to a variety of procedures and the opportunities for advancement to 3157-134 MANAGING SUPERVISOR, DENTAL LABORATORY or to 5131-138 TECHNICAL SALESMAN, MEDICAL-DENTAL EQUIPMENT AND SUPPLIES.

Transfer

Opportunities for transfer exist between dental laboratories which provide for opportunities for the specialization of techniques, or to those which provide the broad experience for future advancement.

E

Advancement

Opportunities for advancement exist for other dental-laboratory workers who obtain the training and experience to qualify as 3157-138 DENTAL TECHNICIAN, GENERAL or as registered Dental Technicians depending on the qualifications required.

Transfer

Because of the highly specialized nature of the work, transfer possibilities are limited to occupations in the same unit group.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- scientific and technical work;
- dealing with people and communicating ideas.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- the precise attainment of set limits, tolerances, and standards.

B

Interests

- business contact with people;
- dealing with things and objects, such as instruments used in dental procedures.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions; doing thing only under specific instruction, allowing little or no room for independent action or judgment in solving job problems; the precise attainment of set limits, tolerances or standards.

C

Interests

- business contact with people;
- work resulting in prestige or the esteem of others;
- non-social work, oriented to the machines and techniques associated with dental laboratories.

Temperaments

- the direction, control and planning of an entire activity or the activities of others; dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria as in making decisions based on business forecasts.

D

Interests

- non-social work, carried on in relation to processes, machines, and techniques;
- activities leading to satisfaction from tangible results such as successfully producing dental appliances to the desired standards;
- dealing with things and objects such as denture models, articulators, grinders and hand tools.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as using dental surveyor to determine convexity on natural teeth; the precise attainment of set limits, tolerances or standards; a variety of duties often characterized by frequent change.

E

Interests

- non-social work in a machine oriented setting to form and finish dental appliances;
- dealing with things and objects such as wax bite-blocks and impression trays.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria such as examining and feeling surfaces to determine the degree of roughness and the buffing procedures required to obtain exact reproductions.

OTHER OCCUPATIONS IN MEDICINE AND HEALTH, N.E.C.

This group includes occupations, not elsewhere classified, concerned with designing, making and fitting prosthetic devices; operating medical equipment for diagnosis or treatment of disease; controlling infection; assisting professional staff in clinics, pharmacies morgues and animal hospitals; sterilizing and packaging hospital supplies; preparing baby formulas and diet menus; and assisting at hospital emergency entrances.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Prosthetic-Device Designers, Assemblers and Fitters</i>																		
3159-110	PROSTHETIST-ORTHOTIST (scient. & ind. equip., n.e.c.)	<u>2</u>	3	<u>3</u>	<u>2</u>	3	3	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 4567	I	5	6	7109	09Y14
3159-114	ARTIFICIAL-EYE MAKER (scient. & ind. equip., n.e.c.)	<u>3</u>	3	3	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	5	<u>2</u>	S 47	I	4	7	7109	09Y4
<i>Medical Equipment Operators, n.e.c.</i>																		
3159-134	INHALATION-THERAPY TECHNICIAN (medical)	<u>3</u>	<u>3</u>	3	3	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 467	I	4	6	791	09Y5
3159-138	ELECTROENCEPHALOGRAPHIC TECHNICIAN (medical)	<u>3</u>	3	3	3	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	5	4	L 47	I	4	6	791	09Y
3159-142	ORTHOPTIST (medical)	<u>3</u>	<u>3</u>	3	3	<u>2</u>	3	<u>4</u>	4	<u>4</u>	5	4	L 467	I	4	6	791	09Y
3159-146	ELECTROCARDIOGRAPHIC TECHNICIAN (medical)	<u>3</u>	3	3	3	<u>3</u>	3	<u>4</u>	<u>3</u>	4	5	5	L 47	I	4	5	791	0Y
<i>Medical Support Occupations, n.e.c.</i>																		
3159-166	INFECTION-CONTROL OFFICER (medical)	<u>2</u>	<u>3</u>	3	3	<u>2</u>	<u>3</u>	3	<u>3</u>	3	5	4	L 47	I	5	7	91	0Y1
3159-170	DIETARY ASSISTANT (prof. & tech., n.e.c.)	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>4</u>	<u>3</u>	4	4	4	5	5	L 567	I	4	6	1	0Y1
3159-174	PHARMACY AIDE (medical)	<u>3</u>	3	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>4</u>	4	<u>4</u>	5	3	L 47	I	3	4	13	0Y
3159-178	MORGUE MAN (medical)	3	4	4	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 4	I	3	4	13	Y2
3159-182	CLINIC ASSISTANT (medical)	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	3	4	3	5	4	L 4567	I 7	3	3	13	5Y2
3159-186	VETERINARY ATTENDANT (medical)	3	3	4	4	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	4	M 347	I	3	3	61	0Y
3159-190	FORMULA-ROOM WORKER (medical)	4	4	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>4</u>	5	5	L 47	I 6	2	3	13	2Y3
3159-194	CENTRAL-SUPPLY AIDE (medical)	4	4	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>4</u>	5	4	L 4	I	2	3	13	2Y
3159-198	EMERGENCY-ENTRY ATTENDANT	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 34	I	2	2	32	23

PAINTERS, SCULPTORS AND RELATED ARTISTS

WORK PERFORMED

This chapter includes occupations concerned with creating original artistic works in a personally interpreted manner, by painting, drawing, sculpturing, engraving, etching and printmaking. Worker functions include: analyzing and synthesizing conceptual data to develop artistic interpretations; and creating and executing artistic works by skilfully employing various media, techniques and work aids. Work activities include: selecting and using paints, pencils, pastels, ink or other media to create artistic compositions; shaping materials such as wood, stone, clay or metal to create three-dimensional art forms; and engraving or etching original designs on metal, wood or other materials for reproduction.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3311-110	ARTIST, PICTORIAL (prof. & tech., n.e.c.)	4	8	3311-118	PRINTMAKER (prof. & tech., n.e.c.)	4	7
3311-114	SCULPTOR (prof. & tech., n.e.c.)	4	8	3311-122	CARVER, TOTEM POLE (woodworking)	3	8

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	3	4	<u>2</u>	<u>2</u>	5	<u>2</u>	<u>1</u>	<u>2</u>	4	<u>3</u>		S-L 3457	I-B 6	4-3	8-7	806	X9
<u>3</u>			<u>1</u>				<u>2</u>		5	<u>1</u>							

APTITUDES AND CAPACITIES

Painters, Sculptors and Related Artists require:

- learning ability and the intellectual capacity to understand and apply the theory and history of art to creatively express ideas, feelings and moods in artistic designs and arrangements, and the ability to apply the various techniques and artistic judgment to the production of original works;
- spatial perception to visualize and capture the relationships of all elements forming an artistic whole, and to represent three-dimensional objects on two-dimensional surfaces;
- form perception to perceive pertinent detail in objects and make

visual discrimination in harmony of colour, shading and width and length of lines;

- eye-hand-finger co-ordination and finger dexterity in the use of small paint brushes, fine chisels and knives when working on paintings, etchings or sculpture;
- manual dexterity when painting large canvas surfaces or when cutting or shaping wood or stone to produce carvings or sculptures;
- colour discrimination to perceive similarities or differences in colours or in hues, recognize harmonious or contrasting colour combinations, and match colours accurately.

TRAINING AND ENTRY REQUIREMENTS

Painters, Sculptors and Related Artists normally require:

- secondary school graduation with emphasis on art and history; and
- a three year course in fine arts at a university; or

- a three year course in fine and applied arts at a college of art or community college; and
- considerable working experience depending upon the innate ability of the individual and the medium worked with.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for Painters, Sculptors and Related Artists depends on demonstrated ability and is usually defined in terms of monetary achievement, gained from recognition.

Transfer

Transfers for Painters, Sculptors and Related Artists possessing the necessary qualifications may be to teaching positions in community colleges, colleges of art and universities, for example, 2792-118 TEACHER, ART.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities of an abstract or creative nature;
- activities leading to satisfaction from tangible results, such as producing works of art that receive critical and general acceptance;
- activities concerned with people and communication of ideas.

Temperaments

- the interpretation of feelings, ideas or facts from a personal viewpoint;
- the evaluation of information using sensory or judgmental criteria, such as determining the components necessary to produce a colour or shade of colour.

OTHER REQUIREMENTS

- a demonstrated artistic ability combined with a creative imagination and an aesthetic appreciation for colour, form and harmony are more important for success than formal education.

PRODUCT AND INTERIOR DESIGNERS

WORK PERFORMED

This chapter includes occupations concerned with creating designs for industrial and commercial products, and designing and decorating interiors, stage settings, and exhibition displays by harmonizing aesthetic considerations with technical and other requirements. Worker functions include: conferring with customers, and production, design and sales personnel to obtain and discuss their suggestions; interpreting and synthesizing information regarding such factors as clients' needs and preferences, costs, production methods and technical specifications; and skilfully using drawing instruments, tools and work aids to draw designs and make patterns. Work activities include: selecting appropriate colours, decorative materials and accessories; and preparing specifications and instructions for production purposes.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3313-110	EXHIBITION AND DISPLAY DESIGNER (prof. & tech., n.e.c.)	5	8	3313-150	COMMERCIAL-DESIGN ARTIST (prof. & tech., n.e.c.)	5	7
3313-114	INTERIOR DESIGNER AND DECORATOR (bus. serv.)	5	8	3313-154	PACKAGE DESIGNER (prof. & tech., n.e.c.)	5	7
3313-118	FURNITURE DESIGNER (furn.)	5	8	3313-158	POTTERY DESIGNER (cement, stone & clay)	5	7
3313-122	SET DESIGNER (broadcast., motion pic. & stage)	5	8	3313-162	WOMEN'S FASHION DESIGNER (ret. trade)	5	7
3313-126	STAINED-GLASS ARTIST (glass)	5	8	3313-166	DESIGNER, PAPER SECURITIES (prof. & tech., n.e.c.)	4	8
3313-130	FUR DESIGNER (fur goods)	5	8	3313-170	SUPERVISOR, DISPLAY (bus. serv.)	4	7
3313-134	GARMENT DESIGNER (garment & fabric; knit goods)	5	8	3313-174	EMBROIDERY DESIGNER (textile)	4	7
3313-138	INDUSTRIAL PRODUCTS DESIGNER (prof. & tech., n.e.c.)	5	8	3313-178	HANDBAG DESIGNER (leather goods)	4	7
3313-142	SHOE DESIGNER (shoes)	5	8	3313-182	SIGN DESIGNER (bus. serv.)	4	7
3313-146	TEXTILE DESIGNER (textile)	5	8	3313-186	CREST DESIGNER (misc. prod. fab., n.e.c.)	4	5

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	3	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>2</u>	<u>3</u>	5	<u>2</u>	S-L 4567	I	5-4	8-5	86		X9
	<u>3</u>			<u>3</u>		<u>3</u>	<u>3</u>			<u>3</u>							

APTITUDES AND CAPACITIES

Product and Interior Designers require:

- learning ability to understand and apply principles and techniques of design and decoration, to evaluate information regarding new developments in materials and styles, to develop new ideas and aesthetic and practical solutions to meet customers' requirements and preferences, and to acquire the necessary academic and technical background;
- verbal ability to communicate clearly with people when presenting and discussing detailed information concerning proposed design of interiors, displays, sets or products;
- spatial perception to visualize final appearance of product to be

made or interior to be decorated, to imagine harmonious arrangement of functional and decorative materials and accessories, and to sketch plans and designs accordingly;

- form perception to notice pertinent detail in objects, materials and pictorial or graphic designs;
- eye-hand-finger co-ordination and finger dexterity to work precisely with small objects such as draughting instruments, scissors and brushes, when making drawings, models, miniature sets and samples of products;
- manual dexterity and ability to reach, to make wrist, hand and arm movements with speed when drawing designs, patterns or lay-outs, and handling drawing instruments, materials and accessories;

- colour discrimination to perceive similarities or differences in shades and colours, and to recognize harmonious and contrasting colour

- combinations in selecting colour schemes to create attractive designs;
- near visual acuity to perform work requiring attention to detail when drawing designs to scale.

TRAINING AND ENTRY REQUIREMENTS

Product and Interior Designers, depending on the complexity of the occupation, normally require:

- eleven to twelve years of general education;
- a two to four-year specialized program in industrial, interior or fashion design usually given in a community college, a technical or trade school, or a school of design; or

- one to three years of on-the-job training under the supervision of a qualified designer.

For Interior Designers, a four-year university program leading to a bachelor's degree in interior design is required.

For Crest Designers, six months to one year of on-the-job training is required.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Competent and imaginative Product or Interior Designers may become chief of design sections in architectural or manufacturing firms, department stores or hotel chains, or the sole designer for a smaller organization. With management ability and knowledge of business practices, they may successfully operate their own enterprises.

Transfer

Product and Interior Designers may transfer to other occupations within this chapter or to various occupations requiring similar skills such as 2163-134 DRAUGHTSMAN, COMMERCIAL and 2165-114 ARCHITECTURAL TECHNOLOGIST, or as found in Chapter 3314, ADVERTISING AND ILLUSTRATING ARTISTS. Designers who deal with textile, fur and leather materials could also transfer to some patternmaking occupations in Chapter 8551, PATTERNMAKING, MARKING AND CUTTING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS. Those designers who have the required academic background and certification, and an interest in teaching activities may transfer to 2791-126 VOCATIONAL TEACHER, TECHNICAL SUBJECTS and 2792-118 TEACHER, ART.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- abstract and creative work as in designing a product or decorating the interior of a home;
- dealing with people and communicating ideas.

Temperaments

- the interpretation of feelings, ideas or facts in terms of personal viewpoint;
- the evaluation of information against sensory or judgmental criteria.

OTHER CLUES AND REQUIREMENTS

Other Clues

- a keen interest in arts and crafts;
- hobbies, such as refinishing furniture, needle work, model building and making own garments.

Other Requirements

- creative ability;
- talent, enthusiasm and persuasiveness.

ADVERTISING AND ILLUSTRATING ARTISTS

WORK PERFORMED

This chapter includes occupations concerned with creating and executing illustrations, artistic designs, signs, cartoons and caricatures for use in books, magazines, newspapers, television commercials, animated motion pictures and for other purposes related to advertising, illustration, entertainment and the distribution of information. Worker functions include: analyzing proposals, sketches or specifications to reproduce commercial or industrial designs specified by client or employer; conferring with colleagues and clients; and skilfully using a variety of artists's brushes, pens, pencils and other art equipment. Work activities include: creating and executing cartoons, advertising layouts and other illustrations by sketching or painting; preparing scripts or story boards; and assembling three-dimensional models.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

3314-110 SUPERVISOR, ART
(prof. & tech., n.e.c.)

5 8

B

GED SVP

3314-114 ANIMATOR
(broadcast., motion pic. & stage)

5 7

3314-118 COMMERCIAL ARTIST
(prof. & tech., n.e.c.)

5 7

3314-122 MEDICAL ILLUSTRATOR
(prof. & tech., n.e.c.)

5 7

3314-126 SCIENTIFIC ILLUSTRATOR
(prof. & tech., n.e.c.)

5 6

3314-130 BACKGROUND-AND-TITLE
ARTIST
(broadcast., motion pic. & stage)

5 7

3314-134 CARTOONIST (print. & pub.) 5 7

3314-136 LAYOUT MAN (prof. & tech., n.e.c.) 4 7

3314-140 CARTOON-BACKGROUND ARTIST 4 7
(broadcast., motion pic. & stage)

3314-146 LETTERING ARTIST 4 6
(prof. & tech., n.e.c.)

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	3	<u>2</u>	<u>2</u>	3	3	3	3	5	<u>2</u>	L 4567	I	5	8	8652	49X5
B	<u>2</u>	<u>3</u>	3	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>2</u>	<u>3</u>	5	<u>2</u>	S-L 4567	I	5-4	7-6	869	X9Y0
		<u>2</u>	4				3	<u>3</u>	<u>3</u>	<u>2</u>	<u>3</u>						

APTITUDES AND CAPACITIES

Advertising and Illustrating Artists require:

- learning ability to understand and apply the principles of art and design to create illustrations, layouts and cartoons for publications or motion pictures;
- verbal ability to communicate effectively with colleagues and clients and to understand and use appropriate technical terminology;
- spatial perception to comprehend forms in space, visualize and depict three-dimensional objects and arrangements on two-dimensional surfaces;
- form perception to prepare artistic designs, signs, cartoons and other illustrations;

- colour discrimination to recognize similarities or differences in colours, or in shades or other values of the same colour, and to make appropriate use of colour and combinations of colour to enhance posters, illustrations and paintings;
- near visual acuity for close-up work.

Advertising and Illustrating Artists in Cluster B also require:

- eye-hand-finger co-ordination to make rapid precise movements while preparing sketches, layouts and other artwork;
- finger dexterity to rapidly manipulate small objects, such as artist's brushes, pens and pencils;
- manual dexterity to move the hands easily and skilfully.

TRAINING AND ENTRY REQUIREMENTS

Advertising and Illustrating Artists normally require:

- secondary school graduation;
- a two to four-year program in fine or applied arts at a college of art, or in applied or graphic arts at a community college or institute of applied arts and technology;

- one to two years of on-the-job training.

For 3314-110 SUPERVISOR, ART a period of on-the-job training and experience from four to six years.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Art Supervisors who have the ability to plan, organize and execute an advertising program may advance to the position of 1179-154 SALES-PROMOTION ADMINISTRATOR in an advertising agency. In addition, some Art Supervisors may operate their own agency or “free-lance” studio, provided they have a broad knowledge of the commercial art field.

B

Some Advertising and Illustrating Artists may advance to 3314-110 SUPERVISOR, ART. Advertising and Illustrating Artists may also advance to teaching positions in their specialty, such as 2733-114 SECONDARY-SCHOOL TEACHER, VOCATIONAL or 2791-114 VOCATIONAL TEACHER, APPLIED-ARTS SUBJECTS, provided they possess the necessary qualifications.

Transfer

A

Art Supervisors may transfer to art teaching positions, normally within their field of specialization, in high schools, vocational schools or community colleges, provided they possess the necessary background and academic qualifications.

B

Transfer possibilities for workers in this cluster are normally limited within their field of specialization. Some workers in this cluster who have a creative flair and the necessary aptitudes may transfer to product design occupations, such as those in Chapter 3313, PRODUCT AND INTERIOR DESIGNERS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- abstract and creative work or experiences;
- dealing with people and the communication of ideas;
- work resulting in prestige or the esteem of others by producing an aesthetically pleasing project which receives critical and popular acceptance;
- business contact with people.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- the evaluation of information against sensory or judgmental criteria, such as determining advertising strategy, developing layouts and analyzing ideas developed by others;
- the interpretation of feelings, ideas or facts in terms of personal viewpoint;
- dealing with people in actual job duties beyond giving and receiving instructions.

B

Interests

- abstract and creative work or experiences;
- dealing with people and the communication of ideas;
- work that is basically non-social in nature, and is carried on in relation to techniques, processes and machines.

Temperaments

- the interpretation of feelings, ideas, or facts in terms of personal viewpoint;
- the evaluation of information against sensory or judgmental criteria, such as determining layouts, colour schemes and general arrangement of illustrations;
- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, such as examining finished work against customers' specifications.

OTHER REQUIREMENTS

- aesthetic appreciation and creativity;
- imagination and artistic judgment.

PHOTOGRAPHERS AND CAMERAMEN

WORK PERFORMED

This chapter includes occupations concerned with photographing people, events, scenes, materials and products using still, motion-picture and television cameras. Worker functions include: setting-up and operating cameras and equipment; synthesizing data to determine arrangement, technique or special treatment to be used concerning subject matter to be photographed; and co-ordinating the timing, location and sequence of photographic operations. Work activities include: studying set-up arrangement to conceive artistic or special effect; arranging and positioning subjects; selecting work aids for a particular photograph or scene; selecting and adjusting camera settings for shutter speed, distance, field of vision and depth of field; loading, exposing and unloading film; and discussing photographic requirements with customers and assistants.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
3315-170	CAMERAMAN, SENIOR, MOTION-PICTURE (broadcast., motion pic. & stage)	5	7	3315-122	CHIEF PHOTOGRAPHER (any ind.)	4	7

B

		GED	SVP			GED	SVP
3315-174	NEWS CAMERAMAN (broadcast., motion pic. & stage)	5	7	3315-172	CAMERAMAN, MOTION-PICTURE (broadcast., motion pic. & stage)	4	7
				3315-178	TELEVISION CAMERAMAN (broadcast., motion pic. & stage)	4	7

C

		GED	SVP			GED	SVP
3315-114	SCIENTIFIC PHOTOGRAPHER (prof. & tech., n.e.c.)	4	7	3315-118	COMMERCIAL PHOTOGRAPHER (prof. & tech., n.e.c.)	4	7
3315-126	PORTRAIT PHOTOGRAPHER (prof. & tech., n.e.c.)	4	7	3315-110	PHOTOGRAPHER, GENERAL (prof. & tech., n.e.c.)	4	7
				3315-130	NEWS PHOTOGRAPHER (print. & pub.)	4	7

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	<u>3</u>	3	<u>2</u>	<u>2</u>	3	4	4	4	5	<u>3</u>	L 4567	B	5-4	7		698 692	X954 954
B	<u>3</u>	3	4	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	3	L-M 4567	I-B	5-4	7		96	90
	<u>2</u>									3								
C	<u>3</u>	3	3	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>2</u>	L 4567	I-B	4	7		9680	X95
	<u>2</u>									5								

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply the principles, techniques and instructions associated with photography and moving-picture or television camera operation;
- spatial perception to observe the path of moving objects and to photograph this action with camera, and to visualize a three-dimensional representation of subjects on a two-dimensional print or film;
- form perception to perceive pertinent details in subject to be photographed, to visualize and utilize best arrangement and shade or light to effect optimum results;
- colour discrimination to observe similarities or differences in colours and utilize harmonious or contrasting combinations;
- physical capacity to perform light to medium work requiring the frequent lifting and carrying of cameras and equipment, or pushing dolly-mounted cameras, and standing or sitting for prolonged periods of time during filming of programs;
- capacity to reach for, handle and feel controls while operating cameras and associated equipment;

- capacity to talk or signal while giving instructions or exchanging information;
- capacity to hear instructions, or to make fine discriminations in sound while operating camera in conjunction with sound equipment;
- visual acuity, both near and far, to adjust camera equipment and to photograph distant scenes;
- capacity to work indoors or outdoors.

Additionally, for Cluster A:

- verbal ability to understand and use terminology associated with photography, and to communicate effectively with people.

Additionally, for Clusters B and C:

- eye-hand-finger co-ordination and finger dexterity to rapidly and accurately load, position, adjust and unload cameras, or to focus and adjust cameras while subject is moving;
- manual dexterity to move the hands easily and skilfully in any direction when setting up cameras and equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- secondary school graduation preferably with emphasis on physics and chemistry;

AND

- a one to three-year community college program in photographic arts; and
- one to two years of on-the-job training;

OR

- four or more years on on-the-job training and experience.

B

- secondary school graduation preferably with emphasis on physics and chemistry; and
- two to four years of on-the-job training and experience.

C

- secondary school graduation preferably with emphasis on physics and chemistry;

AND

- a one to two-year community college program in photographic arts; and
- one year or more of on-the-job training.

OR

- from two to four years of on-the-job training and experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Workers with management ability may advance to managerial occupations in photographic establishments, or to producers and directors of motion pictures or television programs, such as those listed in Chapter 3330, PRODUCERS AND DIRECTORS, PERFORMING AND AUDIOVISUAL

B and C

Workers with supervisory potential may advance to occupations in Cluster A. Experienced workers with management ability and knowledge of business practices may successfully operate their own enterprises.

Transfer

Photographers and Cameramen may become proprietors of camera shops or salesmen of photographic equipment and supplies, such as 5135-166 SALESPERSON, PHOTOGRAPHIC EQUIPMENT AND SUPPLIES. With a limited amount of additional training, transfer is also possible to other specializations within the respective clusters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with people and communicating ideas;
- work that is basically non-social in nature and is carried on in relation to processes, machines and techniques.

Additionally, for 3315-122 CHIEF PHOTOGRAPHER:

- abstract and creative work; and
- business contacts with company's personnel or clients.

Temperaments

- the evaluation of information against sensory or judgmental criteria, for example, determining requirements for photographing and developing all types of pictures or film;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the direction, control and planning of an entire activity or the activities of others.

Additionally, for 3315-170 CAMERAMAN, SENIOR, MOTION-PICTURE:

- the interpretation of ideas and facts in terms of personal viewpoint.

B

Interests

- work that is non-social in nature and is carried on in relation to processes, machines and techniques;
- dealing with people and communicating ideas.

Temperaments

- the evaluation of information against sensory or judgmental criteria, such as selecting lens and adjusting camera settings;
- the evaluation of information against measurable or verifiable criteria.

C

Interests

- work carried on in relation to photography and film processing which are non-social in nature;
- dealing with people and communicating ideas;
- work of an abstract and creative nature;
- work resulting in tangible, productive satisfaction.

Temperaments

- the interpretation of feelings, ideas, or facts in terms of personal viewpoint;
- the evaluation of information against sensory or judgmental criteria; for example, the selection of the type of film, camera and filter to achieve a desired effect;
- dealing with people in actual job duties beyond giving and receiving instructions.

OTHER PHOTOGRAPHERS AND CAMERAMEN

This group includes photographers and cameramen, not elsewhere classified, concerned with animation, aerial, racetrack and street photography.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS										
		Aptitudes										Ints. Temps.
		G	V	N	S	P	Q	K	F	M	E	
		PA	EC	GED	SVP							
3315-134	ANIMATION CAMERAMAN (broadcast., motion pic. & stage)	<u>3</u> 3 <u>3</u> <u>3</u> <u>2</u> 3 <u>3</u> 3 <u>3</u> 5 <u>3</u>	L 4567	I 6	4	7	91	0Y				
3315-138	AERIAL PHOTOGRAPHER (prof. & tech., n.e.c.)	<u>3</u> 3 <u>3</u> <u>3</u> <u>3</u> 4 <u>3</u> <u>3</u> <u>3</u> 5 4	L 467	B 256	4	7	91	0Y				
3315-142	RACETRACK-FINISH PHOTOGRAPHER (amuse. & rec.)	3 4 4 4 <u>4</u> 4 <u>4</u> 4 <u>3</u> 5 4	L 47	I	3	5	931	0Y				
3315-146	STREET PHOTOGRAPHER (amuse. & rec.)	3 3 4 3 4 4 <u>3</u> <u>3</u> <u>4</u> 4 4	L 457	B	3	2	239	792				
3315-150	PHOTOGRAPHER'S HELPER (misc. serv.)	4 4 4 3 <u>4</u> 4 <u>3</u> <u>3</u> <u>3</u> 4 4	M 456	I	2	3	193	2Y3				

OCCUPATIONS IN FINE AND COMMERCIAL ART, PHOTOGRAPHY AND RELATED FIELDS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities in fine and commercial art, photography and related fields, such as laying-out graphic material, preparing and install displays and decorations, creating silhouette portraits, carving reproductions, arranging floral decoratio and assembling artificial flowers, and posing for artists and photographers.

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Other Painters and Related Occupations, Commercial Art and Photography</i>																		
3319-110	SCENERY ARTIST (broadcast., motion pic. & stage)	<u>3</u>	3	4	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>4</u>	<u>1</u>	L 347	B	4	6	801 9X
3319-114	SIGN PAINTER (bus. serv.)	<u>3</u>	3	3	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>2</u>	M 247	B 67	3	7	10 9Y	
3319-118	AIRBRUSH ARTIST (prof. & tech., n.e.c.)	<u>3</u>	4	4	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>2</u>	S 47	I	3	6	10 9Y	
3319-122	ARTIST, POSITIVE (prof. & tech., n.e.c.)	<u>3</u>	3	4	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>2</u>	S 47	I	3	6	1 9Y	
3319-126	PHOTOGRAPH RETOUCHER (misc. serv.)	<u>3</u>	4	4	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>2</u>	S 47	I	3	6	1 9Y	
3319-130	MANNEQUIN ARTIST (plastic prod.)	<u>3</u>	4	4	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>2</u>	S 47	I	3	6	10 9Y	
3319-134	COLOURIST, PHOTOGRAPHY (misc. serv.)	<u>3</u>	4	4	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>2</u>	S 47	I	3	6	10 9Y	
3319-138	INKER AND PAINTER (broadcast., motion pic. & stage)	3	4	4	<u>3</u>	<u>3</u>	4	<u>2</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>3</u>	S 47	I	3	4	1 0Y2	
3319-142	PAINTER, HAND (cement, stone & clay)	3	4	4	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	<u>5</u>	<u>3</u>	S 47	I	3	3	801 9X	
<i>Graphic Lay-Out Workers</i>																		
3319-162	PASTE-UP MAN (print. & pub.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	4	L 47	I	4	6	10 0Y1	
3319-166	COPY STYLIST (print. & pub.)	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	4	3	4	4	5	5	S 4	I	4	6	19 0Y	
3319-170	SIGN-LAYOUT MAN (bus. serv.)	<u>3</u>	3	3	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>3</u>	L 47	I	4	7	190 90Y	
3319-174	LETTERING, PHOTO PROCESS (print. & pub.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	5	4	L 47	I	3	4	19 0Y	
3319-178	SPACE ALLOCATOR, NEWSPAPER ADVERTISING (print. & pub.)	3	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	4	4	5	5	S 47	I	3	4	19 0Y	
3319-182	STENCIL MAKER (bus. serv.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	4	5	5	L 47	I	3	4	19 0Y	
<i>Display Makers</i>																		
3319-202	DISPLAY MAN (bus. serv.)	<u>3</u>	3	3	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>2</u>	<u>3</u>	4	<u>2</u>	L 47	I	4	6	801 9XY	
3319-206	DIORAMA MAKER (bus. serv.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	3	M 47	I	3	6	801 Y9	
<i>Miscellaneous Workers in Fine and Commer Art, Photography and Related Fields</i>																		
3319-226	SILHOUETTE ARTIST (prof. & tech., n.e.c.)	<u>3</u>	3	4	4	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	4	L 47	B	4	6	801 X975	
3319-228	CARVER, REPRODUCTION (prof. & tech., n.e.c.)	<u>3</u>	4	4	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>2</u>	<u>3</u>	<u>5</u>	4	L 47	I	3	7	801 09Y	
3319-230	FLORAL ARRANGER (ret. trade)	<u>3</u>	3	4	<u>3</u>	<u>2</u>	3	<u>4</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>3</u>	L 4567	I	4	6	801 X95	
3319-234	MODEL, ART AND PHOTOGRAPHY (misc. serv.)	4	4	5	4	4	5	4	4	4	<u>4</u>	4	L 3456	B	3	3	3 23	
3319-238	ARTIFICIAL-FLOWER MAKER (misc. prod. fab., n.e.c.)	4	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	3	S 47	I	2	2	10 2Y	

PRODUCERS AND DIRECTORS, PERFORMING AND AUDIOVISUAL ARTS**WORK PERFORMED**

This chapter includes occupations concerned with producing and directing theatrical performances, motion picture productions, and radio and television programs. Worker functions include: co-ordinating various elements of production to maintain schedules and ensure quality; negotiating with sponsors, writers and other staff members to formulate policies, select cast and resolve problems; directing and instructing cast and production personnel to achieve desired mood, interpretation and performance; and supervising activities of stage crews and technical staff. Work activities include: reviewing and approving scripts; auditioning and selecting performers; preparing production budgets and maintaining expenditures within budget limits; planning required technical facilities; directing rehearsals and criticizing performers until desired standard of performance is obtained; and editing visual aspects of motion picture films.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3330-110	PRODUCER, MOTION PICTURE (broadcast., motion pic. & stage)	6	8	3330-122	TECHNICAL PRODUCER (broadcast., motion pic. & stage)	5	8
3330-114	PRODUCER, STAGE (broadcast., motion pic. & stage)	6	8	3330-126	PROGRAM CO-ORDINATOR, BROADCASTING (broadcast., motion pic. & stage)	5	7
3330-118	PRODUCER, BROADCASTING (broadcast., motion pic. & stage)	5	8	3330-130	CASTING OFFICER (broadcast., motion pic. & stage)	5	7

B

		GED	SVP			GED	SVP
3330-150	DIRECTOR, MOTION PICTURE (broadcast., motion pic. & stage)	6	8	3330-166	STAGE MANAGER (broadcast., motion pic. & stage)	5	7
3330-154	MUSICAL DIRECTOR (broadcast., motion pic. & stage)	5	8	3330-170	ART DIRECTOR (broadcast., motion pic. & stage)	5	7
3330-158	DIRECTOR, BROADCASTING (broadcast., motion pic. & stage)	5	7	3330-174	FILM EDITOR (broadcast., motion pic. & stage)	5	7
3330-162	DIRECTOR, STAGE (broadcast., motion pic. & stage)	5	7	3330-178	RECORDING DIRECTOR (amuse. & rec.)	4	7

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	3	4	4	4	5	4	S-L 567	I-B	6-5	8-7	8625	4591
	<u>1</u>		<u>2</u>	<u>3</u>	4												
B	<u>2</u>	<u>2</u>	3	<u>3</u>	<u>2</u>	3	4	4	4	5	<u>3</u>	S-L 567	I-B	6-4	8-7	865	459X91
			4	2	3	4					5	S-L 4567					

APTITUDES AND CAPACITIES

Producers and Directors require:

- learning ability to understand the principles and techniques of communication and creative expression as applied to broadcasting, motion pictures and stage; to acquire necessary knowledge in specialized areas, such as art, dramatics, vocal and instrumental music, sports or public affairs; and the ability to plan, initiate and execute production activities with sound reason, judgment and understanding;
- verbal ability to communicate desired interpretations and detailed instructions effectively to people at various levels;
- spatial perception to interpret stage-set diagrams, determine layout, arrange lighting and sound to create desired effects, and direct movement of actions on stage;
- form perception to examine motion picture, stage, radio and television productions for artistic and technical quality including such elements as lighting, costumes and set designs;

- talking ability to accurately, loudly and quickly convey important directives;
- hearing ability and visual acuity to isolate and concentrate on specific sounds and visual details while exposed to a variety of audio and visual input.

Additionally, Producers require:

- numerical ability to prepare estimations of production costs, to maintain expenditures within budgetary limits and to schedule programming within time provisions.

Additionally, Directors require:

- colour discrimination to detect slight differences in colours and to judge the properties of hue and texture in combinations of light and shade so as to produce the most aesthetic effect.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- high school graduation, preferably at university entrance level;
- academic training in communications and the performing and audiovisual arts, available in some community colleges, technology institutes, universities and theatre or drama schools, combined with workshop sessions lasting two to four years in total;
- four to ten years of on-the-job training which includes; technical experience in electronic and related communications equipment; production experience in areas such as writing, editing, selecting cast

and program content; and business experience in areas such as financing, cost-breakdowns, budgeting, purchasing, logistics and scheduling.

B

- high school graduation, preferably at university entrance level;
- academic training in communications and theatre, radio and television arts at a community college, theatre, drama school or university, combined with workshop sessions lasting two to four years;
- four to ten years of on-the-job training which includes experience in camera work, film editing, staging, props, costuming, make-up, choreography, sound and lighting, timing and special effects.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for talented, hard working and skilled producers and directors is usually from small to large production centres. Generally, Directors who possess sound technical and business knowledge and leadership qualities may become Producers. Advancement for those working in the theatre is from 3330-166 STAGE MANAGER to 3330-162 DIRECTOR, STAGE, 3330-170 ART DIRECTOR or 3330-114 PRODUCER, STAGE; for those working in motion pictures, radio and television advancement is from 3330-158 DIRECTOR, BROADCASTING and 3330-150 DIRECTOR, MOTION PICTURE to 3330-126 PROGRAM CO-ORDINATOR, BROADCASTING and 3330-110 PRODUCER, MOTION PICTURE. Some who possess the required managerial and administrative qualities may become producer-director, executive producer, 1147-166 MANAGER, RADIO STATION, 1147-170 MANAGER, TELEVISION STATION or 1130-142 GENERAL MANAGER, TRANSPORT AND COMMUNICATIONS.

Transfer

Producers and Directors may transfer within their clusters to similar occupations in different types of productions. Those who are sales oriented may transfer to occupations related to publicity, marketing and selling, such as 1179-194 STATIONS-RELATIONS ADMINISTRATOR, 1179-146 PUBLIC-RELATIONS MAN, 1179-154 SALES-PROMOTION ADMINISTRATOR, 1137-110 MANAGER, ADVERTISING, 5174-122 SALESMAN, RADIO OR TELEVISION TIME or consultant in communications to corporations and governmental agencies. Some may become production assistants or program planners in larger centres. Producers and Directors who possess the necessary qualifications and interests may become writers or teachers. See 3353-122 SCRIPT WRITER, 3353-114 EDITOR, CONTINUITY AND SCRIPT and 2792-122 TEACHER, DRAMATIC ART.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Producers and Directors require significant interests in, and dispositions for work involving the following:

Interests

- activities of an abstract and creative nature to develop and realize original themes, concepts, variations and methods of presentation;
- dealing with people and communicating ideas through creative expression;
- work resulting in prestige or the esteem of others;
- situations involving a preference for activities leading to satisfaction from tangible results.

Additionally, for Producers:

- business contact with people.

Temperaments

- the direction, control and planning of an entire production and the activities of artists and studio personnel;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria;
- a variety of duties often characterized by frequent change;
- the interpretation of feelings, ideas or facts in terms of personal viewpoint, is especially important for the director responsible for the artistic aspects of the program.

OTHER CLUES AND REQUIREMENTS

Other Clues

- initiative, enthusiasm, leadership qualities and an analytical mind.

Other Requirements

- physical stamina to work long hours when required to meet the pressures of scheduled programming, to be constantly alert to small details and to be adaptable in handling stressful or unusual situations.

CONDUCTORS AND INSTRUMENTALISTS

WORK PERFORMED

This chapter includes occupations concerned with conducting instrumental groups and playing musical instruments. Worker functions include: synthesizing elements of a musical composition; co-ordinating each instrumentalist's role; instructing musicians on rendition required; and diverting audiences by playing musical instruments either as a soloist or member of a band or orchestra. Work activities include: auditioning and selecting instrumentalists; determining music to be played; studying score; and conducting and playing in rehearsals and performances.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3332-110	ORCHESTRA CONDUCTOR (amuse. & rec.)	6	9	3332-128	CARILLONNEUR (amuse. & rec.)	5	8
				3332-130	MUSICIAN, INSTRUMENTAL (amuse. & rec.)	5	8

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>1</u>	<u>2</u>	3	3	<u>3</u>	2	<u>2</u>	3	3	4	5	L 456	I	6	9	856	459X
B	<u>2</u>	<u>2</u>	3	4	<u>3</u>	3	<u>2</u>	<u>1</u>	<u>2</u>	3	5	L 4567	I-B 5	5	8	856	9X
								4			4						

APTITUDES AND CAPACITIES

Orchestra Conductors require:

- learning ability to acquire an extensive background in music including a knowledge of the technical capabilities of instruments, and to understand and apply musical theory and techniques of conducting to express meaning or feeling in a musical entity;
- verbal ability to understand musical terminology and to communicate ideas and desired effects to members of band or orchestra, either individually or collectively;
- form perception to recognize musical notes and symbols, and to read complete musical scores;
- eye-hand co-ordination to move baton or gesture when directing musicians, according to the musical score;
- ability to extend hands and arms when conducting;
- auditory discrimination to perceive slight differences in pitch and harmony.

Instrumentalists require:

- learning ability to acquire an extensive background in music, and to understand and apply musical theory and the techniques of playing an instrument;
- verbal ability to understand musical terminology and to communicate effectively with conductor or other musicians;
- form perception to recognize musical notes and symbols;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to manipulate instrument parts, such as keys, bow, valves or strings rapidly and accurately to produce notes according to the music being read;
- eye-hand-foot co-ordination, depending on instrument played, to depress pedals, or to march while playing instrument;
- ability to extend hands and arms when playing an instrument;
- auditory discrimination to perceive slight differences in pitch and harmony of sound.

TRAINING AND ENTRY REQUIREMENTS

Conductors and Instrumentalists normally require:

- secondary school graduation preferably with emphasis on the theory and practice of music;

- a three to four-year program at a conservatory of music or equivalent; and
- continued individual study and practice under guidance of a tutor, and usually extending over eight years or more, depending on ability.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for instrumentalists may be gradually, from a minor role to first player, or from a smaller orchestra to a larger group. Advancement may also be from instrumentalist to 3332-110 ORCHESTRA CONDUCTOR, for those with the necessary qualifications. Conductors may advance to larger orchestras or may be appointed conductor of more than one orchestra. Some conductors may also become musical directors.

Transfer

Transfer may be to other orchestras or bands or to 2792-114 MUSIC TEACHER, INSTRUMENTAL which requires teacher certification for those who wish to work in education. Transfer may also be to related work such as 3332-114 COMPOSER, 3332-118 ARRANGER, 3332-122 ORCHESTRATOR or 3332-142 COPYIST, for those who possess the necessary qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations as conductors or instrumentalists require significant interests in, and dispositions for work involving the following:

Interests

- abstract and creative work as in interpreting musical compositions;
- work resulting in prestige or the esteem of others as in conducting an orchestra or playing before the public;
- dealing with people and the communication of ideas through music.

Temperaments

- the evaluation of information against sensory or judgmental criteria as in determining rendition of music;
- the interpretation of feelings, ideas, or facts related to music, in terms of personal viewpoint.

Additionally, for Orchestra Conductors:

- the direction, control and planning of activities of an orchestra or band;
- dealing with people in actual job duties beyond giving and receiving instructions as in auditioning, selecting and instructing musicians.

OTHER CLUES AND REQUIREMENTS

Other Clues

- an affinity for music evident in activities, such as collecting records or playing a musical instrument either informally at home, or in a school band, may be indicative of a potential career in music.

Other Requirements

- a talent for music including the ability to create and improvise, and sense of pitch, rhythm and harmony;
- ability to express the beauty and meaning of music to the audience;
- perseverance to practice and rehearse diligently;
- creativity as it applies to variations and improvisations in musical expression.

Orchestra Conductors also require:

- ability to give directions as to tempo, volume and expression, orally, by baton movements, facial expression and gestures;
- ability to lead, and to inspire the members of band and orchestra to respond to him.

CHOIRMASTERS AND SINGERS

WORK PERFORMED

This chapter includes occupations concerned with conducting vocal groups, and singing classical, operatic, church or popular music. Worker functions include: synthesizing knowledge of musical and vocal characteristics to achieve desired performance; co-ordinating voice with others and with musical accompaniment; instructing singers in delivery; and entertaining audiences by singing as a soloist or member of a group or choir. Work activities include: auditioning and selecting singers; determining music and parts for individual singers; studying words and music; and directing choirs at rehearsals and performances.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

3332-126 CHOIRMASTER (amuse. & rec.) 5 8

B

GED SVP

GED SVP

3332-134 CONCERT SINGER (amuse. & rec.) 5 8

3332-138 POPULAR SINGER (amuse. & rec.) 4 7

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	3	3	<u>3</u>	3	3	3	3	4	5	L 456	I	5	8	865	459X
B	<u>2</u>	<u>2</u>	4	5	<u>3</u>	3	4	4	4	5	5	L 456	I	5-4	8-7	865	X9
	<u>3</u>	<u>3</u>															

APTITUDES AND CAPACITIES

Choirmasters and Singers require:

- learning ability to acquire a broad background in music, and to understand and apply musical theory and singing techniques;
- verbal ability to read lyrics, understand musical terminology, express

music in a foreign language, and communicate effectively when working with other musicians;

- form perception to recognize musical notes and symbols;
- auditory discrimination to perceive slight differences in tonal and harmonic balance.

TRAINING AND ENTRY REQUIREMENTS

Choirmaster and Singers normally require:

- secondary school graduation preferably with emphasis on the theory and practice of music;

- a three or four-year program at a conservatory of music or equivalent; or
- individual study and practice under guidance of a tutor, and usually extending over four years or more, depending on ability.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for singers may be from a minor role in a vocal group to a position as soloist or lead singer; singers and choirmasters may advance from smaller to larger groups. Singers may advance to the position of choirmaster if they possess leadership ability and other necessary qualifications.

Transfer

Transfer may be from singing a particular kind of music to singing another, such as operatic or popular music, or to working in different specializations, such as night clubs, recording, television, motion pictures or commercials. Singers may also transfer to 2792-110 MUSIC TEACHER, VOCAL and tutor privately or, if they possess the required qualifications, teach in educational institutions. Some singers, for example those who perform in musical comedies, may become 3335-110 ACTOR or 3335-122 COMEDIAN, if they have the required training and background.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupations of choirmaster or singer require significant interests in, and dispositions for work involving the following:

Interests

- abstract and creative work;
- dealing with people and the communication of ideas through song;
- work resulting in prestige or the esteem of others as in directing a choral group or singing before audiences.

Temperaments

- the evaluation of information against sensory or judgmental criteria as in judging which music best suits a vocal group;
- the interpretation of feelings, ideas, or facts in terms of personal viewpoint.

Additionally, for Choirmasters:

- the direction, control and planning of vocal group activities;
- dealing with people in actual job duties beyond giving and receiving instructions, as in auditioning or tutoring singers.

OTHER CLUES AND REQUIREMENTS

Other Clues

- a deep interest in music as evidenced through singing in a school or church choir, in informal groups or entering talent shows.

Other Requirements

- a talent for music in general, and singing in particular;
- ability to interpret music to an audience through singing;
- capacity to articulate and to project voice, sense of rhythm and pitch;
- perseverance to practice and rehearse diligently;
- creativity as it applies to variations and improvisations in musical expression.

COMPOSERS, ARRANGERS AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with composing, adapting, arranging, orchestrating and copying music. Worker functions include: synthesizing knowledge of music and instrumentation, and original ideas to write musical scores; and arranging parts for individual performers from musical scores. Work activities include: writing symphony, opera, film, play and popular music scores; transcribing musical compositions for a particular arrangement; transposing music for another musical instrument; and copying musical parts for individual performers.

LIST OF OCCUPATIONAL TITLES

		A				B	
		GED	SVP			GED	SVP
3332-114	COMPOSER (amuse. & rec.)	6	9	3332-118	ARRANGER (amuse. & rec.)	6	8
				3332-122	ORCHESTRATOR (amuse. & rec.)	6	8
		A				B	
		GED	SVP			GED	SVP
3332-142	COPYIST (amuse. & rec.)	4	7				

QUALIFICATIONS PROFILES

Aptitudes													PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>1</u>	<u>2</u>	3	3	<u>2</u>	3	3	3	3	5	5	S 4567	I	6	9-8	86	9X	
		<u>1</u>																
B	<u>2</u>	<u>3</u>	4	4	<u>2</u>	<u>2</u>	4	3	3	5	5	S 47	I	4	7	6	0Y	

APTITUDES AND CAPACITIES

- Composers, Arrangers, Orchestrators and Copyists require:
- learning ability to acquire an extensive background in music, including a knowledge of the technical capabilities of instruments, and to understand and apply musical theory and the techniques involved in arranging, orchestrating, composing or copying;

– verbal ability to understand musical terminology, to write words to accompany music and to communicate effectively with other musicians;
- form perception to recognize musical notes and symbols and read musical scores;

– auditory discrimination to compose, arrange and orchestrate music.
- Copyists also require:
- clerical perception to note pertinent detail when copying music.

TRAINING AND ENTRY REQUIREMENTS

- Workers in this chapter normally require:
- A

– secondary school graduation preferably with emphasis on the theory and practice of music;

– a three to four-year program at a conservatory of music or equivalent; and

B

– individual study and practice under the guidance of a tutor, usually extending over a period of eight years or more, depending on ability.

– secondary school graduation preferably with emphasis on the theory and practice of music;

– two to four-year program at a conservatory of music or equivalent.
- 168

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement, for occupations in Cluster A, may be to 3332-110 ORCHESTRA CONDUCTOR. Copyists may advance to occupations in Cluster A if they possess the additional training and other qualifications. For those composers who possess management capabilities and business potential, it may also be possible to form an independent recording company.

Transfer

Transfer may occur between occupations within Cluster A or to 3332-130 MUSICIAN, INSTRUMENTAL. Transfer may also be to positions for teaching music either privately, or in an academic institute, if persons possess suitable qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- abstract and creative work;
- dealing with people and communicating ideas through music.

Temperaments

- the evaluation of information against sensory or judgmental criteria as in adapting musical arrangements;
- the interpretation of feelings, ideas or facts in terms of personal viewpoint as in creating a musical composition.

B

Interests

- dealing with people and communicating ideas.

Temperaments

- the evaluation of information against measurable or verifiable criteria as in transcribing musical scores;
- the precise attainment of set limits, tolerances or standards.

OTHER CLUES AND REQUIREMENTS

Other Clues

- a talent for music usually, indicated through either playing an instrument or singing in a group or alone.

Other Requirements

- creative imagination and aesthetic sensibility;
- for composers, arrangers and orchestrators, ability to mentally manipulate sound images and imagine tonal patterns;
- ability to play a musical instrument to assist in composing, orchestrating or arranging.

CHOREOGRAPHERS AND DANCERS

WORK PERFORMED

This chapter includes occupations concerned with creating, interpreting, and performing dances. Worker functions include: analyzing and synthesizing music and movement of the body to express own interpretation of dances or to create original dances for others; instructing dancers; and entertaining audiences through dance performances. Work activities include: conducting rehearsals and demonstrating body movements; exercising and rehearsing; and performing dances as a soloist, with a partner or as a member of a dancing group.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

3333-110 **CHOREOGRAPHER**
(broadcast., motion pic. & stage)

5 8

B

GED SVP

3333-114 **DANCER** (amuse. & rec.)

4 7

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	3	<u>2</u>	3	4	3	4	4	<u>2</u>	5	M 234567	I	5	8	685 X9451	
B	<u>2</u>	<u>3</u>	3	<u>2</u>	3	4	<u>2</u>	3	3	<u>1</u>	5	M 23457	I	4	7	685 XY9	

APTITUDES AND CAPACITIES

Choreographers and Dancers require:

- learning ability to understand, interpret and apply the principles of body movement, dance forms and production techniques;
- verbal ability to communicate ideas and instructions to dancers and to understand and/or use dance notations and terminology;
- spatial perception to visualize body movements in relation to space, proper sequence and time, and to relate own position to that of others in ensemble dance performances;
- eye-hand-foot co-ordination to make precise movements rhythmically or gracefully in dance patterns, in response to visual or audible stimuli;

- physical capacity and stamina to perform medium to heavy work, which may occasionally require the lifting of other dancers, during long and intense rehearsals and performances;
- agility to demonstrate or assume difficult yet graceful body positions requiring the balancing of self or partner, and assuming postures requiring stooping, kneeling, crouching, crawling, leaping and reaching in harmoniously co-ordinated patterns that express moods and characterizations;
- good visual acuity to see details in posture assumed by one or more dancers to appraise or stimulate their performance, and depth perception and accommodation to judge distance and space relationships.

TRAINING AND ENTRY REQUIREMENTS

Choreographers normally require:

- a minimum of twelve years of general education;
- four to ten years of vocational preparation usually acquired through a combination of dancing experience, assisting a qualified choreographer, and instruction in dance composition, dance form, stage techniques and other related subjects.

Courses in these subjects are provided in dance conservatories, fine arts departments of universities, and other schools of the performing arts.

Dancers normally require:

- twelve years of general education;
- training of from four to eight years for dancers of classical ballet only; and
- two to four years of training for dancers of modern, musical comedy, exhibition, and ethnic dances.

Depending on the particular dance style, training is usually provided by schools of dancing, ballet groups, conservatories, or other schools of the performing arts.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Choreographers and Dancers are usually employed in the television, motion picture, stage, and nightclub industries or in other entertainment organizations or groups.

Advancement

Dancers possessing considerable knowledge of music theory and composition, stage technique and art and instructional capability may advance to the occupation of choreographer.

Choreographers and Dancers, possessing the necessary academic qualifications, training and experience, may advance to teaching positions in a ballet company or dance department of a university, community college or other school. See 2792-126 TEACHER, DANCING.

Transfer

Transfer possibilities for Choreographers are limited because of the specialized nature of work performed. Dancers who possess the necessary skills may transfer to related occupations, such as 3139-114 RECREATIONAL THERAPIST, 3335-110 ACTOR, and 6143-110 MAKE-UP ARTIST.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- dealing with people and communicating ideas;
- activities of an abstract and creative nature;
- activities resulting in prestige or the esteem of others, involving a high degree of physical and mental discipline and effort to achieve recognition of their talent through public performance.

Temperaments

Choreographers

- the interpretation of feelings or ideas in terms of personal viewpoint;
- the evaluation of information against sensory or judgmental criteria to express a theme, mood or emotion by means of co-ordinated body movements;
- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- a variety of duties often, characterized by frequent change.

Dancers

- the interpretation of feelings or ideas in terms of personal viewpoint;
- the precise attainment of set limits or standards;
- the evaluation of information against sensory or judgmental criteria to express a theme, mood or emotion by means of co-ordinated body movements.

OTHER REQUIREMENTS

- good health and physical co-ordination;
- charm, gracefulness, alertness and ability to get along well with others;
- sensitivity to beauty and emotional expression, stage presence, poise, tact, and dignity developed at an early age;
- emotional stability to withstand hardships and disappointments that often are part of a theatrical career;

- enthusiasm for the art to give up many normal aspects of living in pursuit of excellence of performance;
- perseverance in learning, training and exercising for many years;
- creativity, talent and a broad knowledge of dancing and music;

In addition, Choreographers require a knowledge of the artistic capabilities of many dancers, and a broad repertoire of musical selections.

ACTORS

WORK PERFORMED

This chapter includes occupations concerned with performing in dramatic productions, pantomines, comedy routines, impersonation or ventriloquial acts for stage, television, radio, motion pictures or other audiences. Worker functions include: developing interpretations and presentations concerning the theme of the production or routine, the type of character impersonation, and the purpose of the role or act to be portrayed; entertaining audiences; speaking and signaling to express character verbally or through movement and gesture. Work activities include: studying scripts, story lines, character sketches, mannerisms or voice intonations; memorizing lines and cues; auditioning and rehearsing for a role or act; and attending wardrobe fittings and make-up sessions.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3335-110	ACTOR (amuse. & rec.)	5	7	3335-118	VENTRILOQUIST (amuse. & rec.)	4	7
3335-114	MIME (amuse. & rec.)	5	7	3335-122	COMEDIAN (amuse. & rec.)	4	6
				3335-126	IMPERSONATOR (amuse. & rec.)	4	6

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	4	3	4	4	4	4	4	4	5		L 456	I-B	5-4	7-6	685	X951
	<u>3</u>		4	3		<u>3</u>	<u>3</u>	<u>3</u>	5								XY51
									<u>2</u>								

APTITUDES AND CAPACITIES

Actors normally require:

- learning ability to understand and apply the basic principles and techniques of creative expression, to acquire knowledge and background in subject matter area, and to use judgment in adapting to various roles, popularity trends, styles of acting or performing, or mood of audience;
- verbal ability, a facility with language and a capability to communicate expression of character and emotion effectively to audiences;
- eye-hand-finger co-ordination and finger and manual dexterity in cases where props or movement are important to the performance,

as for 3335-118 VENTRILOQUIST, when manipulating dummies or hand puppets;

- eye-hand-foot co-ordination to effectively control body movements and gestures when interpreting roles, especially important for 3335-114 MIME;
- good physical stamina to work long hours and to accept the disciplines of rigorous rehearsal;
- talking ability and a good projective speaking voice to enunciate clearly and correctly;
- hearing to perceive discriminations in sound and to appreciate the variety of meanings and feelings conveyed by the voice.

TRAINING AND ENTRY REQUIREMENTS

Actors normally require:

- secondary school graduation preferably at university entrance level;
- academic training in the performing arts leading to a certificate, diploma or degree from a community college, university, theatre or

drama school, combined with intensive practical training lasting from one up to four years;

- for other workers in this chapter there are no established training and entry requirements.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be from back stage work to extra and bit parts, and from character to lead roles in radio, theatre, television and motion picture productions. Advancement may also be to stage direction and managing occupations, as found in Chapter 3330 PRODUCERS AND DIRECTORS, PERFORMING AND AUDIOVISUAL ARTS. In addition, those who possess the necessary experience may advance to 2792-122 TEACHER, DRAMATIC ART in a theatre school, university or community college.

Transfer

Transfer may be between occupations within this chapter and also to occupations concerned with broadcasting or administering business affairs of entertainers and theatrical companies, such as 3337-114 ANNOUNCER, 3337-122 MASTER OF CEREMONIES and 1179-118 AGENT. Transfer is possible to occupations concerned with providing production support services for stage, radio, television or motion pictures, such as 3339-126 PRODUCTION MAN and 3339-130 SCRIPT ASSISTANT. Transfer possibilities also exist to occupations concerned with performing mystifying or other acts to entertain audiences, such as 3332-138 POPULAR SINGER, 3339-166 MAGICIAN or 3339-170 PUPPETEER provided they possess the necessary qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to acting occupations require significant interests in, and dispositions for work involving the following:

Interests

- activities resulting in prestige or esteem of others as revealed by the admiration, respect and response of the audience;
- activities concerned with people and the communication of ideas as in projecting or impersonating a character or portraying great depth of feeling;
- abstract or creative work as exhibited by portraying original roles based on scripts or stories for the first time on stage or other media.

Temperaments

- the interpretation of feelings, ideas or facts in terms of personal viewpoint such as interpreting the various styles of acting required by playwrights and conventions of each age;
- dealing with people in actual job duties beyond giving and receiving instructions as required when working with other members of the cast and production team;
- a variety of duties often characterized by frequent change, such as studying script, memorizing lines and cues and rehearsing part.
- the evaluation of information against sensory or judgmental criteria to determine the essence of character portrayed and the relation of that character in the overall scheme of the play;
- the precise attainment of set limits, tolerances or standards so as to achieve intended effect, especially significant for 3335-118 VENETRILOQUIST and 3335-126 IMPERSONATOR.

OTHER CLUES AND REQUIREMENTS

Other Clues

- a well developed imagination combined with sensitivity and an acute awareness and observation of life;
- self discipline, perseverance, patience, flexible character traits;
- self confidence, charm and outgoing personality, poise, posture;
- ambition coupled with a strong desire for recognition.

Other Requirements

- intelligent and alert mind and perception for detail;
- retentive memory;
- versatility in adapting to various types of roles.

RADIO AND TELEVISION ANNOUNCERS

WORK PERFORMED

This chapter includes occupations concerned with announcing radio and television programs. Worker functions include: speaking during broadcasts to inform, educate or entertain audiences; compiling, collating and appraising information on people and events, and preparing scripts or news reports; and co-ordinating time and sequence of broadcasting operations to ensure adherence to program schedule. Work activities include: identifying station using call letters; cueing control room to execute specific actions; operating control board or sound equipment; conducting live or taped interviews, or acting as master of ceremonies for certain programs; reading prepared news bulletins, advertisements and special announcements; observing, describing and commenting on sports events or events of unusual interest; selecting and presenting programs of recorded music; and making public-address announcements.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3337-110	ANNOUNCER-PRODUCER INTERNATIONAL SERVICE (broadcast., motion pic. & stage)	5	7	3337-122	MASTER OF CEREMONIES (amuse. & rec.; broadcast., motion pic. & stage)	5	6
3337-114	ANNOUNCER (broadcast., motion pic. & stage)	5	7	3337-126	PUBLIC-ADDRESS ANNOUNCER (amuse. & rec.)	4	6
3337-118	SPORTS ANNOUNCER (broadcast., motion pic. & stage)	5	6	3337-130	DISK JOCKEY (broadcast., motion pic. & stage)	4	5

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>2</u>	<u>2</u>	3	4	4	3	4	4	4	5	5	L 4567	B	5-4	7-5	65	591
<u>3</u>		4	3		4											

APTITUDES AND CAPACITIES

Announcers require:

- learning ability to understand and apply principles and techniques of communication arts; to acquire a broad cultural background, an awareness of current issues and extensive knowledge in subject area assigned; and to use judgment when selecting broadcast material, formulating questions and making comments;
- verbal ability to quickly and accurately comprehend ideas expressed in written medium in order to read news flashes, advertisements or other types of script with proper emphasis and inflection; and to communicate in a concise, well organized, and interesting manner

when acting as master of ceremonies or when giving a description of public meetings and sports events;

- good physical stamina and mental energy to work long hours in a medium which constantly requires poise, wit, charm, spontaneity and adaptability in meeting the demands of scheduled programming;
- ability to make swift and accurate hand, arm and finger movements when operating control board and sound or recording equipment;
- good hearing to be able to receive detailed information through oral communications or sound cues;
- clarity of vision to perceive detail when describing events.

TRAINING AND ENTRY REQUIREMENTS

Announcers normally require:

- secondary school graduation preferably at the university entrance level;
- program of studies in broadcasting or communication arts at an institute of technology, community college or university covering

speech techniques, voice development, timing, sound and video control, production and direction combined with broadcasting training; and

- a period of from one to four years practical experience;
- for 3337-130 DISK JOCKEY, a period of six months to one year on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for those with acquired experience and demonstrated ability may be from announcer-trainee in a small broadcasting station to announcer and chief announcer in a larger station. An announcer may also advance by being assigned a regular program as a disc jockey, sportscaster or other specialist. Some careers lead from announcing to stage direction or managing occupations, such as those found in Chapter 3330, PRODUCERS AND DIRECTORS, PERFORMING AND AUDIOVISUAL ARTS.

Some announcers who have the required training, talent and skill may advance to occupations in other phases of broadcasting work, such as those found in Chapter 3353, WRITERS AND EDITORS: RADIO, TELEVISION, THEATRE AND MOTION PICTURES or become performers, such as 3335-110 ACTOR, 3335-122 COMEDIAN or 3332-138 POPULAR SINGER.

Transfer

Transfer may be between occupations within this chapter, and also to occupations concerned with providing support services for stage, radio and television, such as 3339-126 PRODUCTION MAN, 3339-130 SCRIPT ASSISTANT and 5174-122 SALESMAN, RADIO OR TELEVISION TIME. Some announcers transfer to advertising or public relations agencies or to other businesses that service the broadcasting industry. Announcers possessing suitable academic qualifications may transfer to teaching radio and television arts. See 2791-114 VOCATIONAL TEACHER, APPLIED-ARTS SUBJECTS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- activities concerned with people and the communication of ideas when describing events or reporting facts, and expressing point of view to listening and viewing audiences;
- activities resulting in prestige or esteem of others.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions, such as interviewing guests, or acting as master of ceremonies;
- the evaluation of information against sensory or judgmental criteria as when evaluating written script, newscopy or public service feature, selecting material for broadcasting, and determining manner of presentation which will develop and hold the interest of the audience;
- a variety of duties often characterized by frequent change.

OTHER CLUES

- creativity to feed the listeners' imagination;
- spontaneity to respond quickly and intelligently to unexpected statements;

- ability to be relaxed, poised, cheerful, entertaining and witty;
- versatility to adapt conversational style to various types of situations;
- inquiring critical mind, for example, posing questions that would be of interest to the audience.

OCCUPATIONS IN PERFORMING AND AUDIOVISUAL ARTS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities related to the performing and audiovisual arts, such as assembling and setting up stage properties; providing lighting and special effects; training and presenting animals; performing mystifying, humorous, provocative, thrilling and other acts to entertain audiences; and charting horoscopes for individuals.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Production Support Personnel</i>																		
3339-110	PROPERTY MASTER (broadcast., motion pic. & stage)	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	4	4	4	5	4	L 567	B	4	7	26	9Y45
3339-114	WARDROBE SUPERVISOR (broadcast., motion pic. & stage)	<u>3</u>	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	4	4	5	<u>3</u>	S 567	I	4	7	26	9Y45
3339-116	SPECIAL-EFFECTS MAN (broadcast. motion pic. & stage)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	3	<u>3</u>	4	<u>3</u>	L 23467	B 67	4	7	197	9Y
3339-118	CHIEF-STAGE ELECTRICIAN (broadcast. motion pic. & stage)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	4	4	4	5	<u>3</u>	M 457	I	4	7	91	90Y4
3339-120	LIGHT TECHNICIAN (broadcast., motion pic. & stage)	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	<u>3</u>	M 245	B	4	7	91	0Y
3339-122	PROGRAM PLANNER, MUSIC (broadcast., motion pic. & stage)	<u>3</u>	3	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 456	I	4	7	26	95Y
3339-126	PRODUCTION MAN (broadcast., motion pic. & stage)	<u>3</u>	<u>3</u>	4	3	3	4	4	4	4	5	4	L 4567	B	4	6	26	5Y9
3339-130	SCRIPT ASSISTANT (broadcast., motion pic. & stage)	<u>3</u>	<u>3</u>	4	4	3	4	4	4	4	5	5	S 4567	B	4	6	26	5Y1
3339-134	FIREWORKS MAN (amuse. & rec.; explosives)	3	4	4	<u>3</u>	4	5	<u>3</u>	<u>4</u>	<u>3</u>	5	4	M 45	O 5	3	3	193	Y0
3339-138	STAGE HAND (broadcast., motion pic. & stage)	4	4	5	3	4	5	<u>3</u>	4	<u>3</u>	<u>4</u>	5	H 24	B	2	3	139	23Y
<i>Miscellaneous Performers, Entertainers and Related Occupations</i>																		
3339-158	HORSE TRAINER, DRESSAGE-AND-STUNT (amuse. & rec.)	3	4	4	4	3	5	<u>3</u>	3	<u>3</u>	<u>2</u>	5	L 245	B	4	7	6	49Y
3339-162	CLOWN (amuse. & rec.)	3	4	4	3	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	5	L 23456	B	4	6	68	5X
3339-166	MAGICIAN (amuse. & rec.)	3	<u>3</u>	4	4	3	5	<u>2</u>	<u>2</u>	<u>2</u>	4	4	L 457	I	4	6	58	5XY
3339-170	PUPPETEER (amuse. & rec.)	3	<u>3</u>	4	<u>2</u>	4	4	<u>2</u>	<u>2</u>	<u>2</u>	5	4	L 456	I	4	6	8610	5X9
3339-174	MARINE-MAMMAL TRAINER (amuse. & rec.)	3	3	4	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	5	L 345	B 4	4	6	68	49Y
3339-178	DOG TRAINER (amuse. & rec.)	3	3	4	4	4	4	<u>3</u>	4	<u>4</u>	4	5	L 45	B	4	5	68	49Y
3339-182	ASTROLOGER (amuse. & rec.)	<u>3</u>	<u>3</u>	3	3	4	3	4	4	4	5	5	S 56	I	4	5	68	590Y
3339-186	STUNT RIDER (amuse. & rec.)	3	4	4	3	4	5	<u>2</u>	3	<u>2</u>	<u>2</u>	5	M 2347	B	3	6	68	5X8Y
3339-190	STAMPEDE PERFORMER (amuse. & rec.)	4	4	4	3	4	5	<u>2</u>	3	<u>2</u>	<u>2</u>	5	H 23467	B	3	6	6	58
3339-194	DIVER (amuse. & rec.)	3	3	4	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	<u>3</u>	3	M 2457	B 4	3	3	31	25

WRITERS AND EDITORS, PUBLICATION

WORK PERFORMED

This chapter includes occupations concerned with the preparation of written and pictorial material for publication in newspapers, books, magazines, technical manuals, trade journals and other publications. Worker functions include: analyzing and synthesizing data to write material for publication, or to examine editorial copy for clarity, conciseness and adherence to publication policy; supervising the activities of staff; interviewing individuals to obtain information about, and to verify stories of newsworthy events, or to obtain comments and opinions. Work activities include: conducting research into subject matter; planning and writing material; selecting, editing and rewriting texts; participating in press conferences; and reporting on special events.

LIST OF OCCUPATIONAL TITLES

A							
		GED	SVP			GED	SVP
3351-110	EDITOR, BOOK (print. & pub.)	5	8	3351-138	EDITOR, TECHNICAL PUBLICATION (print. & pub.; prof. & tech., n.e.c.)	5	8
3351-114	EDITOR, ADVERTISING (bus. serv.; print. & pub.)	5	8				
3351-118	EDITOR, CITY (print. & pub.)	5	8				
3351-122	EDITOR, EDITORIAL PAGE (print. & pub.)	5	8	3351-142	EDITOR, TRADE OR TECHNICAL JOURNAL (print. & pub.)	5	8
3351-126	EDITOR, FINANCIAL (print. & pub.)	5	8	3351-158	EDITOR, SPORTS (print. & pub.)	5	7
3351-130	EDITOR, MAGAZINE (print. & pub.)	5	8				
B							
		GED	SVP			GED	SVP
3351-134	EDITOR, NEWS (print. & pub.)	5	8	3351-182	REWRITE MAN (print. & pub.)	5	7
3351-146	LEXICOGRAPHER (print. & pub.; prof. & tech., n.e.c.)	5	8	3351-186	EDITOR, TELECOMMUNICATIONS (print. & pub.)	5	7
3351-150	CRITIC (print. & pub.)	5	8				
3351-154	LITERARY WRITER (prof. & tech., n.e.c.)	5	8	3351-190	EDITOR, COPY (print. & pub.; prof. & tech., n.e.c.)	5	6
3351-162	ADVERTISING COPYWRITER (prof. & tech., n.e.c.)	5	7	3351-194	EDITORIAL ASSISTANT (print. & pub.)	5	6
3351-166	COLUMNIST (print. & pub.)	5	7				
3351-170	EDITORIAL WRITER (print. & pub.)	5	7	3351-198	EDITOR, SPECIAL FEATURES (print. & pub.)	4	7
3351-174	REPORTER (print. & pub.)	5	7	3351-202	DESKMAN, SPORTS (print. & pub.)	4	7
3351-178	TECHNICAL WRITER (prof. & tech., n.e.c.)	5	7	3351-206	EDITOR, MAKE-UP (print. & pub.)	4	6
				3351-210	EDITOR, PICTURE (print. & pub.)	4	6

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>1</u>	3	3	3	<u>3</u>	4	4	4	5	5	S 567	I-B	5	8-7	625	4597
				4	4						4						
											3						
B	<u>2</u>	<u>1</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 567	I-B	5-4	8-6	68	9YX7
		<u>2</u>	4	3	3						4						

APTITUDES AND CAPACITIES

Writers and Editors of publications require:

- learning ability to understand and apply the principles and techniques of writing, editing, reporting and interviewing for publication purposes and ability to exercise sound judgment;

- verbal ability to understand words and to use them effectively, both orally and in writing;
- clerical perception to discern pertinent detail in narrative or tabular material as in proofreading.

TRAINING AND ENTRY REQUIREMENTS

Writers and Editors of publications normally require:

- secondary school graduation preferably at university entrance level;
- a two to four year university program in arts, journalism, literature

or languages. Graduate degrees are generally required for more responsible positions;

- a combination of on-the-job training and related experience varying from one to six years, depending on the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Writers and Editors of publications may advance from occupations in Cluster B to occupations in Cluster A provided they possess the necessary skills and experience. Some workers in Cluster A who have acquired considerable experience in planning, organizing and directing relevant activities may advance to managerial positions in publishing establishments; for example, 1149-110 MANAGER, NEWSPAPER, and 1149-114 MANAGER, SCIENTIFIC, TECHNICAL AND OTHER PERIODICAL PUBLICATIONS.

Transfer

Writers and Editors of publications who possess the necessary knowledge and skills may transfer to other occupations within this chapter. In addition, transfer opportunities may exist in other fields employing writers and editors; for example, Chapter 3353, WRITERS AND EDITORS: RADIO, TELEVISION, THEATRE AND MOTION PICTURES, and Group 3359, OCCUPATIONS IN WRITING, N.E.C. For those with suitable qualifications, transfer may also be possible to 2791-114 VOCATIONAL TEACHER, APPLIED-ARTS SUBJECTS. Some Writers and Editors may also transfer to political, governmental or public relations positions, if they possess the required qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- activities concerned with people and the communication of ideas;
- activities involving business contact with people;
- activities resulting in prestige or the esteem of others.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions, as in discussing articles submitted by reporters;
- the evaluation of information against sensory or judgmental criteria, as in evaluating suitability of texts for publication;
- influencing people in their opinions, attitudes or judgments as in determining content of publications.

B

Interests

- activities concerned with people and the communication of ideas such as writing news coverage of foreign and current events;
- abstract and creative work such as writing material about real or imaginary events, people or things.

Temperaments

- the evaluation of information against sensory or judgmental criteria;
- the precise attainment of set limits, tolerances or standards;
- the interpretation of feelings, ideas, or facts in terms of personal viewpoint as in writing literary works or critical reviews;
- influencing people in their opinions, attitudes or judgments as in writing editorials or advertisements.

OTHER CLUES AND REQUIREMENTS**Other Clues**

- an interest in writing, as demonstrated by working for school or club papers, might be indicative of potential as a professional writer.

Other Requirements

- a broad educational background;
- creativity and resourcefulness;
- insight and curiosity about the community at large and current events.

WRITERS AND EDITORS: RADIO, TELEVISION, THEATRE AND MOTION PICTURES

WORK PERFORMED

This chapter includes occupations concerned with selecting, interpreting and editing news or other material for information or entertainment through radio or television broadcasting, and writing and editing scripts for sketches, motion pictures, stage presentations, advertising and broadcasting. Worker functions include: synthesizing data obtained from film, video tape, news items, scripts, stories and commentaries to plan, prepare, organize and write for broadcasting, theatrical or cinematographic purposes; reviewing scripts to ensure conformance to standards of good expression; supervising staff activities; and interviewing individuals to obtain newsworthy information. Work activities include: researching subject matter; evaluating and selecting news items; appraising material for validity, quality and suitability; editing and revising material; and determining format and content of news, public affairs and special events programs.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
3353-110	EDITOR, NEWS, SPECIAL EVENTS AND PUBLIC AFFAIRS (broadcast., motion pic. & stage)	5	8	3353-114	EDITOR, CONTINUITY AND SCRIPT (broadcast., motion pic. & stage)	5	8

B

		GED	SVP			GED	SVP
3353-118	NEWS ANALYST, BROADCASTING (broadcast., motion pic. & stage)	5	8	3353-126	WRITER, NEWS OR SCRIPT, INTERNATIONAL BROADCASTING (broadcast., motion pic. & stage)	5	7
3353-122	SCRIPT WRITER (broadcast., motion pic. & stage)	5	7				

C

		GED	SVP
3353-130	SCRIPT READER (broadcast., motion pic. & stage)	4	6

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	<u>1</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 567	I	5	8	625	4579	
B	<u>2</u>	<u>1</u>	4	4	4	<u>3</u>	4	4	4	5	5	S 56	I-B	5	8-7	68	79X5	
			3															
C	<u>2</u>	<u>2</u>	4	4	4	<u>2</u>	4	4	4	5	5	S 57	I	4	6	6	90	

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply the principles and techniques of writing, editing, reporting and interviewing for broadcasting, cinema or the theatre and the related technical implications;
- verbal ability to understand words and associated ideas and to use them effectively, both orally and in writing;

- clerical perception to discern pertinent detail when reviewing scripts, news and other narrative material.

Script Readers also require good vision for prolonged reading of material.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- secondary school graduation preferably at the university entrance level;
- two to four years of training in radio and television arts, journalism,

- or literature at a college or university; for those who specialize in a particular field of news reporting, additional training in fields such as political science or economics is required;
- a combination of on-the-job training and related experience, varying from one to six years, depending on the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be to progressively more responsible occupations in other clusters within this chapter, for example Script Reader may advance to occupations in Cluster B. Workers in Cluster A, who have acquired a wide background in broadcasting and have demonstrated administrative ability may advance to executive positions in radio, television, theatre and cinematography, such as 1147-174 REGIONAL MANAGER, TELECOMMUNICATIONS SYSTEM or 1147-170 MANAGER, TELEVISION STATION or 1147-166 MANAGER, RADIO STATION and to some occupations in Chapter 3330, PRODUCERS AND DIRECTORS, PERFORMING AND AUDIO-VISUAL ARTS.

Transfer

Transfer may be to occupations in Chapter 3351, WRITERS AND EDITORS, PUBLICATION or Group 3359, OCCUPATIONS IN WRITING, N.E.C.; or to occupations such as 3337-114 ANNOUNCER or 1179-194 STATIONS-RELATIONS ADMINISTRATOR; or to occupations in public relations or teaching if they possess the necessary qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

A

Interests

- activities concerned with people and the communication of ideas to inform or entertain the public;
- activities involving business contact with people;
- work resulting in prestige or the esteem of others.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions, as in discussing assignments with writers;
- influencing people in their opinions, attitudes, or judgments about ideas or things as in writing commentaries for news or current affairs program;
- the evaluation of information against sensory or judgmental criteria as in selecting broadcast topics.

B

Interests

- dealing with people and the communication of ideas;
- abstract and creative work as in writing scripts for plays and films.

Temperaments

- influencing people in their opinions, attitudes, or judgments about ideas or things as in writing and presenting overseas broadcasts;
- the evaluation of information against sensory or judgmental criteria, such as analyzing and commenting on news items;
- the interpretation of feelings, ideas, or facts in terms of personal viewpoint;
- dealing with people in actual job duties beyond giving and receiving instructions as in interviewing knowledgeable or involved persons.

C

Interests

- dealing with people and the communication of ideas as in reviewing books or scripts for language expression.

Temperaments

- the evaluation of information against sensory or judgmental criteria as in appraising written material to be broadcast;
- the evaluation of information against measurable or verifiable criteria, such as assuring material conforms to network policies.

OTHER CLUES AND REQUIREMENTS

Other Clues

- an involvement in drama, literature, or current events through clubs or amateur groups may be an indication of potential in this area.

Other Requirements

- creativity to write original or imaginative material;
- a broad educational background.

TRANSLATORS AND INTERPRETERS

WORK PERFORMED

This chapter includes occupations concerned with translating and interpreting oral or written statements from one language to another. Worker functions include: analyzing the meaning, theme and style of written and spoken language; and delivering interpreted statements. Work activities include: reading and studying texts; consulting dictionaries and other reference sources; writing translations; and listening to delivery of one language and providing simultaneous or consecutive interpretation in another.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
3355-110	INTERPRETER (prof. & tech., n.e.c.)	5	7	3355-118	FOREIGN-BROADCAST TRANSLATOR (broadcast., motion pic. & stage)	5	6
3355-114	TRANSLATOR, SCIENTIFIC DOCUMENTS (prof. & tech., n.e.c.)	5	7	3355-122	TRANSLATOR (bus. serv.; prof. & tech., n.e.c.)	5	6

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>1</u>	4	4	4	<u>3</u>	4	4	4	5	5		S 456	I	5	7-6	6	90Y

APTITUDES AND CAPACITIES

Translators and Interpreters require:

- learning ability to understand and use a wide range of complex or abstract cultural, political, commercial, technical or scientific concepts or terms expressed in two or more languages, and to research and keep up to date on vocabulary usage and new terminology;

- verbal ability to understand meanings of words and ideas associated with them, and to use them effectively, in two or more languages;
- clerical perception to discern pertinent detail in text.

TRAINING AND ENTRY REQUIREMENTS

Translators and Interpreters normally require:

- secondary school graduation preferably at the university entrance level;
- a three-year university program leading to a bachelor's degree in translation, with additional years of study for specialization; or

- a three to four-year program of part time or evening study at a university, plus two to three years of on-the-job training.

For translators of scientific or technical material, additional studies are required in the field of specialization such as law, engineering or sciences.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be from translation work to interpreting for those possessing the required technical and linguistic knowledge and personal qualifications. Translators and Interpreters who have supervisory ability and leadership skills may advance to senior positions within their organization.

Transfer

Workers may transfer between occupations within the chapter, or to occupations in Minor Group 335, OCCUPATIONS IN WRITING, or to TEACHER, MODERN LANGUAGES under 2791-199 Other Community College And Vocational Teachers in Volume I for those with the specified qualifications. Translators and Interpreters, if they possess the necessary qualifications may also apply their knowledge of languages to fields, such as broadcasting, see 3337-110 ANNOUNCER-PRODUCER INTERNATIONAL SERVICE, or to government e.g. foreign service or, international, trade, cultural, religious and relief organizations, and to travel, import-export companies and banks. It is also possible to work on a free-lance basis.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations of Translator and Interpreter require significant interests in, and dispositions for work involving the following:

Interests

- activities concerned with the communication of ideas from one language to another.

Temperaments

- the evaluation of information against sensory or judgmental criteria such as translating texts according to understanding of a foreign language;
- the evaluation of information against measurable or verifiable criteria as in translating technical terminology;
- the precise attainment of set limits, tolerances or standards.

OTHER CLUES AND REQUIREMENTS

Other Clues

- an interest in foreign countries and cultures through travel, reading or study groups.

Other Requirements

- a broad educational background;
- the ability to work under stress and to think quickly is necessary for interpreters.

OCCUPATIONS IN WRITING, N.E.C.

This group includes occupations, not elsewhere classified, concerned with writing and editing activities for broadcasting or for publication.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS										
		Aptitudes										PA EC GED SVP Ints. Temps.
		G	V	N	S	P	Q	K	F	M	E	C
3359-110	HUMORIST (print. & pub.; broadcast., motion pic. & stage)	<u>2</u>	<u>1</u>	4	4	4	4	4	4	4	5	5
		S	456	I	5	7	86	X95				
3359-114	READER, FIRST (print. & pub.)	<u>2</u>	<u>2</u>	4	4	4	3	4	4	4	5	5
		S		I	5	6	86	X9				
3359-118	PROGRAMMED-INSTRUCTION WRITER (bus. serv.; educ.)	<u>2</u>	<u>2</u>	4	3	4	<u>3</u>	4	4	4	5	5
		S	567	I	5	5	86	950				
3359-122	CROSS-WORD-PUZZLE MAKER (print. & pub.)	<u>2</u>	<u>2</u>	4	4	4	<u>3</u>	4	4	4	5	5
		S	7	I	4	6	86	X9				

COACHES, TRAINERS, INSTRUCTORS AND MANAGERS, SPORT AND RECREATION

WORK PERFORMED

This chapter includes occupations concerned with administering and directing athletic programs; managing and coaching teams and individuals; and training and instructing athletes and other individuals in competitive and recreational sport. Worker functions include: co-ordinating team effort, or directing the entire athletic activities of an establishment such as college, university or professional team; analyzing the athletic skills and abilities of individuals; negotiating with athletes or their managers to obtain, sell or trade the services of sports personnel, and arrange their contracts, salaries and working agreements; and instructing, teaching and coaching athletes to improve their physical fitness and individual capabilities for participation in sports. Work activities include: explaining or demonstrating to athletes the fundamentals, rules, techniques and exercises required for a particular sport; observing opposition's strategy and developing counter-play patterns; conducting drills and practices; and recommending changes in personnel.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
3710-110	DIRECTOR, ATHLETICS (educ.)	5	8	3710-118	MANAGER, ATHLETE (amuse. & rec.)	5	7
3710-114	MANAGER, PROFESSIONAL ATHLETIC TEAM (amuse. & rec.)	5	8				

B

		GED	SVP
3710-126	SCOUT, PROFESSIONAL SPORTS (amuse. & rec.)	4	8

C

		GED	SVP			GED	SVP
3710-122	COACH, PROFESSIONAL ATHLETIC TEAM (amuse. & rec.)	5	7	3710-146	GOLF PROFESSIONAL (amuse. & rec.)	3	7
3710-130	INSTRUCTOR, PHYSICAL TRAINING (amuse. & rec.; educ.; pers. serv., n.e.c.)	4	7	3710-150	SKI INSTRUCTOR (amuse. & rec.)	4	6
3710-134	SWIMMING INSTRUCTOR (amuse. & rec.)	4	7	3710-154	JUDO INSTRUCTOR (amuse. & rec.)	3	6
3710-138	ATHLETIC TRAINER (amuse. & rec.)	4	7	3710-158	INSTRUCTOR, ICE SKATING (amuse. & rec.)	3	6
3710-142	COACH, AMATEUR ATHLETIC TEAM (amuse. & rec.)	4	6	3710-162	RIDING INSTRUCTOR (amuse. & rec.)	3	6
				3710-166	INSTRUCTOR, BOWLING (amuse. & rec.)	3	5

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	<u>2</u>	4	4	3	4	4	4	5	5	S-L 45	I-B	5	8-7	256	45971
B	<u>2</u>	<u>2</u>	3	3	3	3	4	4	4	5	5	L 567	B 5	4	8	25	59071
C	<u>2</u>	<u>2</u>	4	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4	L-H 23457	I-B	5-3	7-5	645	4590
	<u>3</u>	<u>3</u>		3	3			<u>3</u>	4	<u>2</u>	5						
										<u>1</u>							

APTITUDES AND CAPACITIES

Workers in Cluster A require:

- learning ability to understand and apply the principles of management, physical education and the rules and regulations concerning athletic sports;
- verbal ability to understand and use sports terminology and to communicate effectively both orally and in writing when directing the affairs of a sports organization;
- numerical ability to prepare budget estimates, negotiate contracts, and control ticket sales and other financial activities.

Scouts, Professional Sports require:

- learning ability to understand the requirements for participation in professional sports, and to recognize and evaluate athletic potential in talented individuals;
- verbal ability to communicate effectively and persuasively when negotiating to obtain the services of players;
- visual acuity and accommodation to observe prospect's performances;

- capacity to work both inside and outside.

Workers in Cluster C require:

- learning ability to understand and instruct in the rules, skills and strategy of their particular athletic specialty;
- verbal ability to communicate effectively when instructing athletes or when addressing the public;
- eye-hand co-ordination to participate, illustrate or demonstrate athletic skills and techniques;
- capacity to move the fingers to demonstrate the use of sports apparatus and techniques, or to massage parts of players' bodies, and to administer first aid;
- manual dexterity to easily demonstrate skills required for sports and games;
- eye-hand-foot co-ordination when demonstrating techniques used in sports, such as skiing, hockey and basketball;
- strength and physical stamina to endure the vigorous physical activities required in coaching or instructing in sports.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

For 3710-110 DIRECTOR, ATHLETICS, a Bachelor degree in Physical Education and a minimum of two years as physical education instructor.

For 3710-114 MANAGER, PROFESSIONAL ATHLETIC TEAM, several years experience as a coach, or as a manager of an amateur team.

For 3710-118 MANAGER, ATHLETE, two years experience as an athlete or trainer.

B

- high school graduation; and
- several years experience as a player or coach.

C

- six to twelve years of general education;
- a minimum of two years of on-the-job training;
- one to two years as an athlete in the particular sport.

For 3710-138 ATHLETIC TRAINER, a degree in physical therapy, or three to four years of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

3710-126 SCOUT, PROFESSIONAL SPORTS and experienced workers in Cluster C may advance to occupations in Cluster A providing they have the requisite educational qualifications. Certain workers in Cluster C may advance to 3710-126 SCOUT, PROFESSIONAL SPORTS.

Transfer

Workers in this chapter may transfer to other areas of work, such as educational administration, teaching, sportswriting, sports announcing, and managing health centres or sporting goods stores.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- business contact with people;
- work resulting in prestige or the esteem of others;
- dealing with people and communicating ideas.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria when hiring administration staff or sports personnel;
- influencing people in their opinions, attitudes or judgments about ideas or things;
- a variety of duties often characterized by frequent change.

B

Interests

- business contact with people;
- work resulting in prestige or the esteem of others.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria, such as observing players' performances and selecting or rejecting them on the basis of observation and interviews;
- evaluating players' performances against measurable criteria;
- influencing people in their opinions, attitudes or judgments about ideas or things;
- a variety of duties often characterized by frequent change.

C

Interests

- dealing with people and communicating ideas;
- dealing with people in social situations;
- work resulting in prestige or the esteem of others.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria, such as observing players to determine their need for improvement, or to plan strategy, analyze game progress and signal changes, and to prescribe routine and corrective exercises to strengthen muscles;
- the evaluation of information against measurable or verifiable criteria.

REFEREES AND RELATED OFFICIALS

This group includes occupations concerned with enforcing rules and regulations governing sporting events, athletic games and competitions.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
3711-110	STEWARD, RACETRACK (amuse. & rec.)	<u>2</u>	<u>3</u>	4	4	3	4	4	4	4	5	4	S 567	I	5	7	265	90451
3711-114	REFEREE (amuse. & rec.)	<u>3</u>	<u>3</u>	<u>4</u>	<u>2</u>	<u>3</u>	4	3	5	4	<u>3</u>	4	L 234567	B 5	4	7	65	09Y5
3711-118	RACING SECRETARY AND HANDICAPPER (amuse. & rec.)	<u>3</u>	3	<u>3</u>	4	3	<u>3</u>	4	4	4	5	4	S 7	I	4	7	1	09Y
3711-122	PATROL JUDGE (amuse. & rec.)	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	4	4	4	4	4	L 257	B	3	6	6	09Y
3711-126	CLERK-OF-THE-COURSE (amuse. & rec.)	<u>3</u>	3	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 7	B	3	6	13	2Y
3711-130	STARTER, HARNESS RACING (amuse. & rec.)	<u>3</u>	3	4	<u>4</u>	<u>4</u>	4	4	4	4	<u>3</u>	5	L 457	O	3	6	93	Y02
3711-134	PLATING INSPECTOR (amuse. & rec.)	4	4	4	4	<u>3</u>	<u>4</u>	4	4	<u>3</u>	4	5	M 347	O 6	3	4*	13	20Y6
3711-138	STARTER, HORSE RACING (amuse. & rec.)	<u>3</u>	<u>4</u>	4	3	4	<u>4</u>	4	4	4	4	4	L 57	O	3	5	3	9Y
3711-142	PADDOCK JUDGE (amuse. & rec.)	3	4	4	4	<u>3</u>	5	4	4	4	5	4	L 567	O	3	5	31	20Y
3711-146	IDENTIFIER, HORSE (amuse. & rec.)	4	4	4	4	<u>3</u>	<u>4</u>	4	4	4	5	<u>3</u>	L 47	O 6	3	4	31	20Y
3711-150	SCOREBOARD OPERATOR (amuse. & rec.)	<u>3</u>	3	4	4	4	<u>4</u>	<u>4</u>	4	4	5	5	S 457	B	3	3	3	2Y
3711-154	HORSE-RACE TIMER (amuse. & rec.)	3	4	4	4	<u>4</u>	<u>3</u>	4	4	4	5	4	S 57	I	3	3	31	2Y
3711-158	CLOCKER (amuse. & rec.)	4	4	4	4	<u>4</u>	<u>3</u>	4	4	4	5	3	L 47	O	3	3	31	2Y
3711-162	RECEIVING-BARN CUSTODIAN (amuse. & rec.)	<u>4</u>	4	4	4	4	<u>4</u>	4	4	4	5	5	L 567	B	3	3	31	2Y
3711-166	CLERK-OF-SCALES (amuse. & rec.)	4	4	<u>4</u>	4	4	<u>4</u>	4	4	4	5	5	L	O	3	3	31	2Y

ATHLETES

WORK PERFORMED

This chapter includes occupations concerned with active participation for monetary gain, in athletic games or sports as competitor or player. Worker functions include: analyzing performance of self or of competitors; devising new strategies or tactics to win sporting events; developing physical ability and proficiency in a particular sport; and driving in automobile or horse races. Work activities include: exercising to develop stamina; practising to increase effectiveness in respective sport; test-driving or making qualifying runs in race cars; and working out with horses to determine their peculiarities prior to races.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

3713-110 ATHLETE (amuse. & rec.)

3 7

B

GED SVP

3713-114 SULKY DRIVER (amuse. & rec.)

3 6

3713-118 JOCKEY (amuse. & rec.)

2 6

GED SVP

3713-122 AUTOMOBILE RACER
(amuse. & rec.)

3 4

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	3	4	<u>2</u>	<u>3</u>	4	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>	4	L 234567	B 56	3	7	56	89
B	3	3	4	<u>3</u>	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	L-M 234567	O 567	2-3	4-6	56	89
				<u>2</u>		1	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>	4						

APTITUDES AND CAPACITIES

Athletes require:

- learning ability to understand the principles of physical fitness and the rules and regulations of the respective sport;
- spatial perception to visualize their positions in relation to team mates and opponents according to pre-game instructions;
- form perception to discern pertinent detail when inspecting sports equipment or examining horses, sulkies or race cars;
- eye-hand co-ordination to make rapid, precise movements; for example, when passing a hockey puck or football to team mate when both are in motion or when overtaking another driver in a race;
- finger dexterity to control a ball when throwing it, or to direct a horse with reins;
- manual dexterity to move the hands and wrists skilfully when throwing a ball, shooting a puck, driving a race car, or delivering a blow when boxing;
- eye-hand-foot co-ordination to catch, hit and throw a ball or to operate the gear shift, pedals and steering wheel of a race car;

- strength and stamina to perform the physical effort demanded by the respective sport;
- ability to maintain body equilibrium during athletic activities when running, skating or riding;
- ability to stoop, kneel and crouch, such as required when catching a ball or tending goal in hockey;
- ability to reach and hold or grasp objects with hands as when catching a baseball or football or restraining an opponent in wrestling;
- capacity to give and hear verbal instructions under noisy conditions during games or to differentiate between sounds during races;
- visual acuity, accommodation, field of vision, depth perception and colour vision to see the location of opponents or objects such as balls and hockey pucks, to judge relative distances, and to identify and distinguish colour markings;

Additionally, for 3713-122 AUTOMOBILE RACER, capability of performing under conditions created by automobile fumes.

TRAINING AND ENTRY REQUIREMENTS

Athletes normally require:

- there are no minimum educational requirements;
- completion of a number of seasons as a team member of individual practice depending on individual's ability and the sport.

B

- nine to ten years of general education;

- on-the-job training or apprenticeship for two years or more depending on individual's ability;
- licensing with a provincial controlling body of the sport.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Athletes may advance, as members of teams or as individuals, to progressively higher levels of professional competition, normally dependent upon their skills, ability and experience. Some athletes with qualifications and potential for leadership and organization may become coaches or managers of teams or of individual competitors.

Transfer

Athletes, having the necessary temperaments and other qualifications, may transfer to occupations concerned with enforcing the rules and regulations governing athletic competitions and sporting events, see Chapter 3711 REFEREES AND RELATED OFFICIALS. Others may take up training, instructing, or scouting for professional sports organizations, see Chapter 3710 COACHES, TRAINERS, INSTRUCTORS AND MANAGERS, SPORT AND RECREATION. Successful competitors become well known to the public, consequently, opportunities for transfer to business endeavour, particularly in the sales field, may arise late in the career of a professional athlete.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- activities resulting in prestige or the esteem of others, such as competing before the public or giving interviews;
- dealing with people and communicating ideas.

Temperaments

- performing adequately under stress when confronted with the critical or unexpected, or taking risks; and
- evaluating information against sensory or judgmental criteria, such as successful competitors anticipating the moves or plays of opponents in team sports, athletic contests or races.

ATTENDANTS, SPORT AND RECREATION

This group includes occupations concerned with attending to the needs of persons engaged in sports and recreational activities and providing facilities to patrons at amusement centres.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
3715-110	PONY-RIDE OPERATOR (amuse. & rec.)	3	<u>3</u>	<u>4</u>	4	4	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 3457	B 6	3	5	62	4915
3715-114	ICEMAN, RINK (amuse. & rec.)	4	4	5	4	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 47	B	3	5	139	2Y3
3715-118	ATHLETIC-EQUIPMENT CUSTODIAN (amuse. & rec.)	3	<u>4</u>	4	4	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	4	4	L 457	B	3	4	13	2Y5
3715-122	AMUSEMENT-CONCESSION OPERATOR (amuse. & rec.)	4	<u>4</u>	<u>4</u>	<u>4</u>	4	4	<u>4</u>	<u>4</u>	<u>3</u>	4	5	L 457	B	3	3	23	2375
3715-126	BILLIARD-PARLOUR ATTENDANT (amuse. & rec.)	4	4	<u>4</u>	4	4	<u>4</u>	<u>4</u>	4	4	5	4	L 457	I	3	3	231	23Y5
3715-130	ATTENDANT, RECREATIONAL FACILITY (amuse. & rec.)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5	L 567	B	3	3	26	5Y1
3715-134	BOWLING-ALLEY ATTENDANT (amuse. & rec.)	<u>4</u>	4	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 4567	I	3	3	26	52
3715-138	SKI-LIFT ATTENDANT (amuse & rec.)	4	4	<u>4</u>	<u>3</u>	4	4	<u>3</u>	<u>4</u>	<u>4</u>	4	5	L 457	O	3	3	193	25Y
3715-142	SECOND (amuse. & rec.)	4	4	5	4	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 34	I	3	3	31	235
3715-146	RIDE OPERATOR (amuse. & rec.)	4	<u>4</u>	4	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	4	5	L 45	O	2	3	193	2Y5
3715-150	FLOORMAN, BINGO (amuse. & rec.)	4	4	<u>4</u>	4	4	4	4	<u>4</u>	4	5	5	L 4567	I	2	2	23	253
3715-154	CADDIE (amuse. & rec.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	5	5	H 457	O	2	2	31	235
3715-158	DRIVE-IN THEATRE ATTENDANT (amuse. & rec.)	4	4	<u>4</u>	4	4	4	4	<u>4</u>	4	5	5	L 457	O	2	2	13	23
3715-162	JOCKEY VALET (amuse. & rec.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 47	B	2	2	31	235
3715-166	RIDE ATTENDANT (amuse. & rec.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 457	O	2	2	3	2Y
3715-170	GOLF-RANGE ATTENDANT (amuse. & rec.)	4	4	5	4	4	5	<u>3</u>	4	<u>3</u>	<u>4</u>	5	L 347	B	2	2	13	23

OCCUPATIONS IN SPORT AND RECREATION, N.E.C.

This group includes occupations, not elsewhere classified, in the fields of athletics, sports and recreation.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
3719-110	MOUNTAIN GUIDE (amuse. & rec.)	3	3	4	<u>3</u>	<u>3</u>	5	<u>3</u>	4	<u>3</u>	<u>1</u>	5	VH 234567	O 67	4	7	21	45978
3719-114	HUNTING AND FISHING GUIDE (amuse. & rec.)	3	4	4	<u>3</u>	3	4	<u>4</u>	4	<u>3</u>	<u>3</u>	4	H 24567	O	3	6	21	549
3719-118	DUDE WRANGLER (amuse. & rec.)	3	4	4	<u>3</u>	3	4	<u>4</u>	4	<u>3</u>	4	5	H 245	O	3	5	21	549
3719-122	JOCKEY-ROOM CUSTODIAN (amuse. & rec.)	4	4	4	4	<u>4</u>	4	4	5	5	5	3	L 567	I	2	3	23	52Y
3719-126	GOLF-COURSE RANGER (amuse. & rec.)	4	<u>4</u>	5	4	4	4	4	4	<u>4</u>	<u>4</u>	5	L 457	O	2	2	13	205

CLERICAL SUPERVISORS

(Includes supervisory Unit Groups 4110 through 4190)

WORK PERFORMED

This chapter includes occupations concerned with supervising and co-ordinating the activities of workers engaged in performing a variety of clerical duties, such as recording, transcribing and typing dictated or prepared material; paying and receiving money; operating office machines, electronic data-processing equipment and telephone switchboards; receiving and shipping goods; and distributing mail, and delivering messages. Worker functions include: determining time, place and sequence of clerical operations or action to be taken on the basis of analysis of data; and supervising workers by defining or interpreting work procedures, assigning specific duties and ensuring assigned tasks are completed according to schedule. Work activities include: maintaining harmonious relations and promoting efficiency; requisitioning materials, money or supplies; hiring and training workers; preparing production reports; evaluating quality of work; recommending or initiating personnel actions such as promotions, transfers and disciplinary measures; conferring with workers to resolve complaints and grievances; and suggesting measures to improve work methods, service or working conditions.

LIST OF OCCUPATIONAL TITLES

<i>Supervisors, Stenographic and Typing Occupations</i>		4150-118 SUPERVISOR, STOCK CLERKS (clerical)
4110-110 SUPERVISOR, STENOGRAPHERS AND TYPISTS (clerical)		<i>Supervisors: Library, File, Correspondence Clerks and Related Occupations</i>
4110-114 SUPERVISOR, TELETYPISTS (clerical)		4160-110 SUPERVISOR, LIBRARY AND FILE CLERKS (clerical)
<i>Supervisors, Bookkeeping, Account-Recording and Related Occupations</i>		<i>Supervisors: Reception, Information, Mail and Message Distribution Occupations</i>
4130-110 SUPERVISOR, BOOKKEEPERS AND ACCOUNTING CLERKS (clerical)		4170-110 SUPERVISOR, MAIL AND POSTAL CLERKS (clerical)
4130-114 SUPERVISOR, CASHIERS (clerical)		4170-114 SUPERVISOR, MAIL CARRIERS (gov. serv.)
4130-118 SUPERVISOR, INSURANCE, BANK AND OTHER FINANCE CLERKS (bank. & finance; insur. & real estate)		4170-118 SUPERVISOR, MESSENGERS (clerical)
4130-122 SUPERVISOR, STATISTICAL CLERKS (clerical)		4170-122 SUPERVISOR, RECEPTIONISTS AND INFORMATION CLERKS (clerical)
4130-126 HEAD TELLER (bank. & finance)		4170-126 SUPERVISOR, TELEPHONE OPERATOR (telecom.)
4130-130 ASSISTANT ACCOUNTANT, BANK (bank. & finance)		4170-130 SUPERVISOR, POSTAL STATION (gov. serv.)
<i>Supervisors, Office Machine and Electronic Data- Processing Equipment Operators</i>		<i>Supervisors, Other Clerical and Related Occupations, n.e.c.</i>
4140-110 SUPERVISOR, ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS (clerical)		4190-110 SUPERVISOR, CLAIMS ADJUSTERS (clerical)
4140-114 SUPERVISOR, OFFICE-MACHINE OPERATORS (clerical)		4190-114 SUPERVISOR, COLLECTION CLERKS (clerical)
<i>Supervisors: Material Recording, Scheduling and Distributing Occupations</i>		4190-118 SUPERVISOR, GENERAL OFFICE CLERKS (clerical)
4150-110 SUPERVISOR, PRODUCTION CLERKS (clerical)		4190-122 SUPERVISOR, HOTEL CLERKS (cater. & lodg.)
4150-114 SUPERVISOR, SHIPPING AND RECEIVING CLERKS (clerical)		

**4190-126 SUPERVISOR, PERSONNEL
CLERKS** (clerical)

4190-130 SUPERVISOR, TRAVEL CLERKS
(clerical)

**4190-134 SUPERVISOR, COPYRIGHT
CLEARANCE**
(broadcast, motion pic. & stage)

**4190-138 SUPERVISOR, NURSING
REGISTRY** (medical)

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5		S-L 56	I	5-3	7-5	25	450
<u>2</u>		<u>3</u>								4							

APTITUDES AND CAPACITIES

Clerical Supervisors require:

- learning ability to understand and apply supervisory principles and practices, and the techniques associated with the type of clerical work supervised;
- verbal ability to effectively communicate with superiors and subordinates;

- numerical ability when supervising activities of workers engaged in keeping accounts and financial records, paying and receiving money, maintaining bank's and customers' records, bookkeeping, billing, requisitioning and accounting for stock, adjusting claims, and collecting payments;
- clerical perception to detect errors in correspondence, price lists, inventory records and other written or tabular material.

TRAINING AND ENTRY REQUIREMENTS

Supervisors of workers in this chapter are normally appointed from employees who have demonstrated leadership qualities and initiative in lower level jobs. The normal requirement is ten to fourteen years of education, general and/or commercial; and six months to four years

experience in related subordinate positions and/or on-the-job training, depending on the supervisory position involved. Some employers may provide formalized courses in such subjects as business management, work simplification, job relationships, and job instruction training to potential or newly-appointed supervisors.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Clerical Supervisors who demonstrate superior ability and potential for development normally may advance to managerial or administrative positions such as assistant manager or department manager within their establishment or field of work. For example, 4140-110 SUPERVISOR, ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS could advance to 1131-114 MANAGER, DATA PROCESSING AND SYSTEMS ANALYSIS, while 4150-114 SUPERVISOR, SHIPPING AND RECEIVING CLERKS may be promoted to 1149-146 MANAGER, WAREHOUSE. Opportunities also exist for advancement to other managerial or related occupations such as 1149-126 MANAGER, ADMINISTRATION, 1174-118 PERSONNEL OFFICER, and 1179-182 ADMINISTRATIVE OFFICER. See Major Group 11, MANAGERIAL, ADMINISTRATIVE AND RELATED OCCUPATIONS for additional promotional possibilities.

Transfer

Clerical work is commonly found in most establishments, regardless of the type of goods they produce or the services they render. Consequently, Clerical Supervisors could transfer to similar positions in other departments, branches or establishments; or to other supervisory occupations within this chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry into clerical supervisory occupations require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- work resulting in prestige or the esteem of others.

Temperaments

- the direction, control, and planning of an entire activity or the activities of subordinate clerical personnel;
- dealing with people in actual job duties beyond giving and receiving instructions.

OTHER REQUIREMENTS

- initiative and drive;
- ability to motivate people to work conscientiously in activities that are frequently routine and repetitive;
- ability to perform work done by subordinates, and other similar or related work.

SECRETARIES AND STENOGRAPHERS

WORK PERFORMED

This chapter includes occupations concerned with taking dictation by shorthand, steno-type machine or dictaphone, transcribing data by typewriter, and performing general office duties. Worker functions include: compiling and collating information and operating typewriters, and other transcribing machines. Work activities include: composing routine correspondence, taking dictation, answering and making telephone calls, making appointments, filing, and classifying correspondence.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

4111-110 SECRETARY (clerical)

4 6

B

GED SVP

4111-114 COURT REPORTER (clerical)

3 6

GED SVP

4111-118 STENOGRAPHER (clerical)

3 5

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	<u>3</u>	3	4	<u>3</u>	<u>2</u>	<u>3</u>	<u>3</u>	3	5	5	S 4567	I	4	6	26	59Y1
B	<u>3</u>	<u>3</u>	4	4	<u>3</u>	<u>3</u>	<u>2</u>	<u>2</u>	3	5	5	S 4567	I	3	6-5	36	2Y3
							<u>3</u>	<u>3</u>									

APTITUDES AND CAPACITIES

Secretaries and Stenographers require:

- learning ability to understand and apply a system of shorthand writing and to understand and apply general office procedures;
- verbal ability to understand meaning and relationships of words and ideas associated with them to ensure proper use of grammar, correct spelling and, for some positions, a knowledge of specialized terminology;
- form perception to perceive differences in shorthand symbols;

- clerical perception to observe details in written or tabular material, and to ensure a high degree of accuracy in transcription;
- eye-hand-finger co-ordination to make precise and rapid shorthand symbols and to transcribe them accurately by typewriter;
- finger dexterity to move fingers quickly and accurately while operating typewriter or shorthand machines;
- capacity for hearing instructions and asking for clarification by listening and talking;
- near visual acuity to discern shorthand notes and handwriting.

TRAINING AND ENTRY REQUIREMENTS

Secretaries and Stenographers normally require:

- ten to twelve years of general education; and
- three to six months of training in a business college, or one year in a special commercial course at a high school;

OR

- graduation from a secondary commercial school.

Secretaries also require from three months to one year of stenographic experience to become proficient especially when a knowledge of the terminology of a particular field, such as medicine, law or engineering is required.

Court Reporters also require speed training in shorthand, or other methods of speedwriting and the use of shorthand machines and dictaphones.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Secretaries and Stenographers with supervisory ability may advance to 4110-110 SUPERVISOR, STENOGRAPHERS AND TYPISTS. See also Chapter 410, CLERICAL SUPERVISORS for qualifications profile. Stenographers may become Court Reporters after completing the special training required.

Transfer

Stenographers may transfer to some clerical occupations in Major Group 41, CLERICAL AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to secretarial and stenographic occupations require significant interests in, and dispositions for work involving the following:

Secretaries

Interests

- business contacts with people;
- activities concerned with people and the communication of ideas.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- evaluating information, using sensory or judgmental criteria as in scheduling appointments, interviewing and screening office visitors to appropriate official or office;
- the precise attainment of set limits or standards, as in recording minutes of meetings, compiling and typing statistical reports, and composing, typing and filing correspondence;
- a variety of duties often characterized by frequent change.

Court Reports and Stenographers

Interests

- routine, concrete and organized work;
- activities concerned with people and the communication of ideas.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits or standards, as in recording and transcribing data accurately;
- doing things only under specific instruction, allowing little room for independent action or judgment in solving job problems.

TYPISTS AND CLERK-TYPISTS

WORK PERFORMED

This chapter includes occupations concerned with recording data by typewriter; transmitting or receiving messages by teletype; and performing general office duties, most of which involve typing. Worker functions include: operating telegraphic and manual typewriters and dictating machines; and copying information from files and from typewritten and handwritten data. Work activities include: transcribing letters, reports and other recorded data, sending and receiving messages by teletype; and filing and keeping records.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4113-110	AUTOMATIC-TYPEWRITER OPERATOR (clerical)	3	4	4113-122	VARI-TYPE OPERATOR (clerical)	3	4
4113-114	TELETYPE (clerical)	3	4	4113-124	CLERK-TYPIST (clerical)	3	3
4113-118	TRANSCRIBING-MACHINE OPERATOR (clerical)	3	4	4113-126	TYPIST (clerical)	3	3

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
3	3	4	4	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	3	5	5	S 4567	I	3	4-3	3-1	2Y3
				<u>2</u>	<u>2</u>	<u>2</u>										

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the operation of typewriters and to comprehend and apply instructions for typing and transcribing information;
- spatial perception for vari-type operators and typists to visualize spacing and arrangement of material in narrative and tabular form;
- form perception to note pertinent detail when typing charts and statistical data;
- clerical perception to perceive pertinent details in written or tabular material, to proofread finished copy, and to observe typing and transcription errors;

- eye-hand-finger co-ordination to type rapidly and accurately while reading from copy, and to make necessary adjustments;
- finger dexterity to manipulate typewriter keys with speed and accuracy;
- capacity to extend the hands and arms to pick up and collate material, insert paper and tape, and operate typing and transcribing machines;
- good hearing and listening ability;
- near-visual acuity to read handwritten reports and correct typing errors.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- ten to twelve years of general education; and

- commercial or business college training from three to six months; or
- three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement is usually from 4113-124 CLERK-TYPIST and 4113-126 TYPIST to 4111-118 STENOGRAPHER, if additional training in shorthand or speed writing has been taken. Those with supervisory and leadership abilities, and sufficient experience, may advance to supervisory occupations in Volume I, Unit Group 4110 SUPERVISORS, STENOGRAPHIC AND TYPING OCCUPATIONS. See also Chapter 410, CLERICAL SUPERVISORS for qualifications profile.

Transfer

Transfer may be to other related occupations such as 4143-134 KEY-PUNCH OPERATOR or 4143-142 REMOTE COMPUTER TERMINAL OPERATOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities of a routine and organized nature, such as typing from prepared material;
- dealing with things and objects, such as typewriters, paper, and material to be typed.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set standards of accuracy and format;
- work under specific instructions, allowing little scope of independent action or judgment.

BOOKKEEPERS AND ACCOUNTING CLERKS

WORK PERFORMED

This chapter includes occupations concerned with computing, classifying and recording data to maintain sets of financial records. Worker functions include: compiling data for statements, computing figures for accounts, giving information on accounts and other financial matters to associates and the public, and operating various office machines. Work activities include: verifying accuracy of records related to receipts and other transactions; correcting computational errors, posting entries in ledgers, balancing financial records, and preparing reports.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4131-110	ACCOUNT- INFORMATION CLERK (elec. power)	4	6	4131-134	ACCOUNTING CLERK (clerical)	4	5
4131-114	BOOKKEEPER (clerical)	4	6	4131-138	AUDIT CLERK (bank. & finance; clerical)	3	5
4131-118	PAYROLL CLERK (clerical)	4	5	4131-142	BOOKKEEPING CLERK (clerical)	4	4
4131-122	BILLING CLERK, UTILITIES (elec. power)	3	6	4131-146	BUDGET CLERK (clerical)	3	5
4131-126	COST CLERK (clerical)	4	5	4131-150	BALANCE CLERK (clerical)	3	4
4131-130	FOOD CONTROLLER (cater. & lodg.)	4	5	4131-154	BILLING CLERK (clerical)	3	4
				4131-158	TIMEKEEPER (clerical)	3	3
				4131-162	POSTING CLERK (clerical)	3	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	3	<u>3</u>	4	4	<u>2</u>	<u>3</u>	<u>3</u>	4	5	5	S 47	I	4-3	6-3	13	Y	3Y
		<u>2</u>		3	<u>3</u>	4	4										

APTITUDES AND CAPACITIES

Bookkeepers and Accounting Clerks require:

- learning ability to understand and apply accounting and bookkeeping principles and procedures, including the preparation of financial statements;
- numerical ability to make mathematical computations quickly and accurately;
- clerical perception to note pertinent details, such as debits and

credits in accounts, to proofread words and numbers, and to avoid errors in arithmetic computation;

- eye-hand-finger co-ordination and finger dexterity to move hands and fingers accurately and rapidly when operating various office machines;
- near-visual acuity for compiling, computing and checking statements and accounts.

TRAINING AND ENTRY REQUIREMENTS

Bookkeepers and Accounting Clerks normally require:

- ten to twelve years of general education, preferably with emphasis on mathematics and commercial subjects;

- from one month to two years of on-the-job training, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to positions requiring higher skills within the chapter. Those who have a potential for supervision may advance to 4130-110 SUPERVISOR, BOOKKEEPERS AND ACCOUNTING CLERKS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Transfer may be to other positions requiring similar skills within this chapter, or to appropriate occupations in Chapters 4133, TELLERS AND CASHIERS; 4135, INSURANCE, BANK AND OTHER FINANCE CLERKS; 4137, STATISTICAL CLERKS; and 4139, BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS, N.E.C., where a short training period may be sufficient to acquaint the worker with the new occupation.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects, such as ledgers and accounts;
- routine, concrete and organized work.

Temperaments

- the precise attainment of standards of accuracy;
- doing things only under specific instructions allowing little room for independent action or judgment in working out job problems.

TELLERS AND CASHIERS

WORK PERFORMED

This chapter includes occupations concerned with receiving and disbursing money in establishments such as stores, banks, trust companies, credit unions, theatres, and race tracks. Worker functions include: performing arithmetical computations; compiling information to prepare bank reconciliation and other financial statements; giving information to customers and assisting them with their financial transactions. Work activities include: receiving and paying out money; recording monetary transactions such as cash received from customers in banks and stores, race tracks and theatres; preparing bank statements and reconciling errors or discrepancies in financial records; counting and issuing money for use in sales departments and places of amusement; selling admission tickets; collecting tolls at toll-bridges; and cashing winning parimutuel tickets at race tracks.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4133-110	TELLER (bank. & finance)	4	5	4133-122	CASHIER, OFFICE (clerical)	3	4
4133-114	FOREIGN-EXCHANGE TELLER (bank. & finance)	4	5	4133-126	MONEY COUNTER (clerical)	3	4
4133-118	CASHIER (clerical)	3	4	4133-130	CASHIER, BOX OFFICE (clerical)	3	3
				4133-134	CASHIER, CUSTOMER SERVICE (ret. trade)	3	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>2</u>	<u>3</u>	<u>3</u>	4	5	4	S-L 4567	I	4-3	5-3	231	5Y2	
	4	<u>2</u>			<u>3</u>												
					4												

APTITUDES AND CAPACITIES

Tellers and Cashiers require:

- learning ability to understand and apply the procedures for receiving, accounting and disbursing money in banking, business and other financial establishments;
- verbal ability to communicate effectively with people and to answer a variety of enquiries;
- numerical ability to perform arithmetic computations quickly and accurately when receiving, counting and paying out money and making change;

- clerical perception to observe and correct errors or omissions in statements and accounts and to note pertinent detail in rate tables and price lists;
- eye-hand-finger co-ordination and finger dexterity to make precise movements with speed and accuracy while counting money, and operating cash registers and calculating machines;
- near visual acuity for checking statements or paying out and receiving money.

TRAINING AND ENTRY REQUIREMENTS

Tellers and Cashiers normally require:

- ten to twelve years of general education;

- on-the-job training of from three months to one year, depending on the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Experienced Tellers and Cashiers with supervisory ability may advance to appropriate occupations in Volume I, Unit Group 4130, SUPERVISORS, BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Tellers and Cashiers may, with some additional training, transfer to some occupations in Chapter 4131, BOOKKEEPERS AND ACCOUNTING CLERKS, because of the similarity of work performed.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupations of Teller and Cashier require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people, such as answering enquiries and paying out and receiving money;
- activities of a routine, concrete and organized nature, such as cashing cheques, selling tickets and receiving payment of accounts;
- dealing with things and objects, such as bank books, tickets, cheques and financial statements.

Temperaments

- dealing with people in actual job duties, beyond giving and receiving instructions;
- attainment of set limits or standards, such as ensuring that financial transactions are balanced;
- evaluation of information using measurable or verifiable criteria, such as determining whether an account has been overdrawn, by examining outstanding cheques and preparing bank reconciliation statements, and balancing transactions on a periodic basis;
- repetitive or short cycle operations which occur regularly during a set period, such as receiving deposits and payments on accounts and cashing cheques.

INSURANCE, BANK AND OTHER FINANCE CLERKS

WORK PERFORMED

This chapter includes occupations concerned with performing clerical duties in banking, insurance, finance, real estate, and other fields. Worker functions include: making arithmetic computations, compiling insurance, finance and real estate data; and operating adding, calculating and similar office machines. Work activities include: reviewing insurance applications, calculating premiums, dividends and cash-surrender values, making insurance-policy changes; processing applications for loans and mortgages; checking ledgers, renting safety-deposit boxes and recording security deposits.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
	<i>Insurance Clerks</i>			4135-162	DIVIDEND CLERK (insur. & real estate)	3	3
4135-110	GENERAL CLERK, INSURANCE (insur. & real estate)	4	6		<i>Bank Clerks</i>		
4135-114	POLICY-CHANGE CLERK (insur. & real estate)	4	6	4135-182	UTILITY CLERK, BANK (bank. & finance)	4	6
4135-118	PROPERTY AND EQUIPMENT INSURANCE CLERK (clerical)	4	6	4135-186	FOREIGN-REMITTANCE CLERK (bank. & finance)	4	6
4135-122	SPECIAL-ENDORSEMENT CLERK (insur. & real estate)	4	6	4135-190	RESERVES CLERK (bank. & finance)	4	6
4135-126	ACTUARIAL CLERK (insur. & real estate)	4	5	4135-194	SECURITIES CLERK (bank. & finance)	4	5
4135-130	REINSURANCE CLERK (insur. & real estate)	4	5	4135-198	CREDIT CLERK, BANK (bank. & finance)	4	5
4135-134	INSURANCE CLERK, BANK (bank. & finance)	3	5	4135-202	COLLECTION CLERK, BANKING (bank. & finance)	3	5
4135-138	WORKSHEET CLERK (insur. & real estate)	3	5	4135-206	BANK-RECONCILIATION CLERK (bank. & finance)	3	5
4135-142	INSURANCE CHECKER (insur. & real estate)	3	5	4135-210	SAFETY-DEPOSIT-BOX CUSTODIAN (bank. & finance)	3	4
4135-146	EMPLOYEE-INSURANCE CLERK (clerical)	3	5		<i>Other Finance Clerks</i>		
4135-150	INSURANCE CLERK, HOSPITAL (medical)	3	4	4135-230	PENSION-PLAN CLERK (clerical)	4	5
4135-154	RATER, PREMIUM (insur. & real estate)	3	4	4135-234	REAL ESTATE CLERK (insur. & real estate)	4	5
4135-158	CLAIM CLERK (insur. & real estate)	3	3	4135-238	MORTGAGE CLERK (bank. & finance)	3	5
				4135-242	BROKERAGE CLERK (bank. & finance)	3	5
				4135-246	MARGIN CLERK (bank. & finance)	3	5

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	3	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	4	5	5		S 4567	I	4-3	6-3	312	Y5 Y53
					<u>2</u>	<u>4</u>	<u>3</u>										

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply numerical, record-keeping and data gathering systems and procedures in establishments, such as those of banking, insurance, finance, and real estate;
- verbal ability for those occupations which involve giving clear and precise information to clients, orally or in writing;

- numerical ability to perform arithmetic operations quickly and accurately;
- clerical perception to observe discrepancies in written or mathematical data;
- eye-hand-finger co-ordination and finger dexterity to operate office machines quickly and accurately;
- near visual acuity for close-up work involving the review of insurance and loan applications, and making calculations.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter generally require:

- ten to twelve years of general education, with emphasis on commercial subjects and mathematics;

- three months to two years of on-the-job training, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be to more complex occupations within this chapter. Experienced workers with supervisory ability and leadership qualities may advance to 4130-118 SUPERVISOR, INSURANCE, BANK AND OTHER FINANCE CLERKS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Transfer may be to other occupations in this chapter requiring similar skills. Transfer may also be made to occupations, such as 4131-138 AUDIT CLERK; 4131-142 BOOKKEEPING CLERK; and 4131-150 BALANCE CLERK; or to appropriate positions in Chapter 4131, BOOKKEEPERS AND ACCOUNTING CLERKS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized activities;
- dealing with things and objects, such as insurance policies, mortgages, statements, and office equipment;
- business contact with people.

Temperaments

- the precise attainment of set limits or standards of accuracy;
- dealing with people in actual job duties beyond giving or receiving instructions, such as promoting goodwill and giving information or advice to customers.

STATISTICAL CLERKS

WORK PERFORMED

This chapter includes occupations concerned with compiling and tabulating statistics, based on routine or special information, and preparing reports to assist in the interpretation of statistical studies. Worker functions include: compiling information, making mathematical computations, and operating desk computers, adding and calculating machines. Work activities include: preparing charts, graphs, diagrams and statistical tables for use in statistical studies; assembling and classifying data; checking data for accuracy, completeness and consistency; and preparing reports.

LIST OF OCCUPATIONAL TITLES

GED SVP

4137-110 STATISTICAL CLERK (clerical)

4 5

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	3	<u>2</u>	4	3	<u>2</u>	<u>3</u>	3	4	5	5		L 47	I	4	5	3	20Y

APTITUDES AND CAPACITIES

Statistical Clerks require:

- learning ability to understand and apply the principles and procedures of record-keeping and data-gathering for the compilation and analysis of statistical data;
- numerical ability to understand and apply arithmetic and statistical procedures and to correct computational errors;
- clerical perception to discern pertinent detail in graphic or tabular material, proofread numbers and avoid errors in computations;
- eye-finger co-ordination to prepare charts, graphs and diagrams, and to operate office machines;
- capacity to extend hands and arms to retrieve statements and other statistical material;
- near visual acuity to see numbers clearly and to review statistical tables for correctness and completeness.

TRAINING AND ENTRY REQUIREMENTS

Statistical Clerks normally require:

- twelve years of general education with an emphasis on mathematics;
- six months to one year of on-the-job training;
- some previous experience in clerical work involving the use of adding or calculating machines.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced Statistical Clerks with supervisory ability may advance to 4130-122 SUPERVISOR, STATISTICAL CLERKS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile. With additional mathematical training, some Statistical Clerks may advance to 2189-114 STATISTICAL TECHNICIAN.

Transfer

Transfer may be to some clerical occupations, requiring similar skills, in Chapter 4131, BOOKKEEPERS AND ACCOUNTING CLERKS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of Statistical Clerk require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work which involves constant attention to clerical detail to produce reliable statistical data.

Temperaments

- repetitive operations carried out according to set procedures or sequences for preparing and analyzing statistics;
- evaluating information against measurable or verifiable criteria;
- precise attainment of standards of accuracy for a variety of statistical data.

BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with classifying, compiling and recording information, and transferring this data into accounts and quantitative records.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS									
		Aptitudes									
		G	V	N	S	P	Q	K	F	M	E
4139-110	CONTRACT CLERK (clerical)	<u>3</u>	<u>3</u>	3	4	4	<u>2</u>	<u>3</u>	4	4	5
4139-114	RATE REVIEWER (elec. power; utilities, n.e.c.)	<u>3</u>	<u>3</u>	<u>2</u>	4	4	<u>2</u>	3	3	4	5
4139-118	UTILITIES CLERK (elec. power; telecom.; utilities, n.e.c.)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5
4139-122	CREDIT CLERK (clerical)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	3	4	4	5
4139-126	TONNAGE-COMPILATION CLERK (water trans.)	<u>3</u>	3	<u>2</u>	4	4	<u>2</u>	3	4	4	5
4139-130	INTERLINE-ACCOUNTS CLERK (air trans.; motor trans.; rail trans.)	<u>3</u>	3	<u>3</u>	5	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5
4139-134	FOREIGN-INVOICE CLERK (clerical)	<u>3</u>	3	<u>2</u>	4	4	<u>2</u>	3	4	4	5
4139-138	FREIGHT-RATE CLERK (clerical)	<u>3</u>	3	<u>2</u>	4	4	<u>2</u>	4	4	4	5
4139-142	DEMURRAGE CLERK (rail trans.; water trans.)	<u>3</u>	3	<u>3</u>	5	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5
4139-146	WHARF CLERK (water trans.)	<u>3</u>	3	<u>3</u>	5	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5
4139-150	RATE-REVISION CLERK, FREIGHT (motor trans.; rail trans.)	<u>3</u>	3	<u>3</u>	5	4	<u>3</u>	4	4	4	5
4139-154	CHART CLERK (clerical)	<u>3</u>	3	<u>3</u>	4	<u>3</u>	<u>3</u>	3	4	4	5
4139-158	PLANIMETER OPERATOR (clerical)	3	4	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	3	5
4139-162	ADVERTISING-SPACE MEASURER (print. & pub.)	3	4	<u>4</u>	4	<u>4</u>	<u>3</u>	3	4	4	5
4139-166	LAND MEASURER (clerical)	3	4	<u>4</u>	<u>3</u>	4	<u>3</u>	4	4	4	5
4139-170	CODING CLERK (clerical)	4	4	4	5	4	<u>4</u>	4	4	4	5
4139-174	CHECKER, ATTENDANCE (amuse. & rec.)	4	4	4	5	4	4	<u>4</u>	<u>4</u>	4	5

OFFICE MACHINE OPERATORS

WORK PERFORMED

This chapter includes occupations concerned with operating office machines for purposes, such as bookkeeping, calculating, coding, photocopying, embossing, addressing, folding, inserting, coin sorting, counting and wrapping. Worker functions include: operating or tending office machines by manipulating keys and levers; and computing, copying and comparing data. Work activities include: inserting record cards or rolls of paper tape into machines; setting machine guides and adjusting feed-mechanisms for duplicating, addressing, and embossing operations; preparing mail for distribution; and performing general office duties.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
4141-110	BOOKKEEPING-MACHINE OPERATOR (clerical)	4	5	4141-126	AUDIT-MACHINE OPERATOR (clerical)	3	4
4141-114	CRYPTOGRAPHIC-MACHINE OPERATOR (clerical)	4	5	4141-130	BILLING-MACHINE OPERATOR (clerical)	3	4
4141-118	PHOTOCOMPOSING-MACHINE-PERFORATOR OPERATOR (print. & pub.)	3	5	4141-134	CALCULATING-MACHINE OPERATOR (clerical)	3	4
4141-122	PROOF-MACHINE OPERATOR (clerical)	3	4	4141-138	TYPESETTER-PERFORATOR OPERATOR (print. & pub.)	3	4
				4141-154	ADDING-MACHINE OPERATOR (clerical)	3	3

B

		GED	SVP			GED	SVP
4141-142	CURRENCY SORTER (clerical)	3	4	4141-190	INSERTING-MACHINE TENDER (clerical)	2	2
4141-150	MICROFILM-RECORDS SEARCHER (clerical)	3	4	4141-194	PHOTOCOPYING-MACHINE TENDER (clerical)	2	2
4141-162	INTEGRATOR OPERATOR (clerical)	3	3	4141-198	STENCIL-CUTTER TENDER (clerical)	2	2
4141-170	COIN-MACHINE TENDER (clerical)	2	2	4141-202	MICROFILM MOUNTER (bus. serv.)	2	2
4141-178	ADDRESS-LABELLING-MACHINE TENDER (clerical)	2	2	4141-206	ADDRESS-PLATE INSERTER (clerical)	2	2 *
4141-182	BURSTING-MACHINE TENDER (clerical)	2	2				
4141-184	ENVELOPE-SEALING AND IMPRINTING MACHINE TENDER (clerical)	2	2				

C

		GED	SVP			GED	SVP
4141-146	DUPLICATING-MACHINE OPERATOR (clerical)	3	4	4141-166	EMBOSSING-MACHINE OPERATOR (clerical)	2	3
4141-148	BLUEPRINTING-MACHINE OPERATOR (bus. serv.)	3	4	4141-174	MIMEOGRAPH OPERATOR (clerical)	2	2
4141-158	ADDRESSING-MACHINE OPERATOR (clerical)	3	3	4141-186	EXCISE-STAMP CANCELLING MACHINE TENDER (clerical)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	3	<u>3</u> 4	4	<u>3</u> <u>4</u>	<u>3</u> <u>2</u>	<u>3</u>	<u>3</u>	3	5	5	S 47	I	4-3	5-3	913	2Y3	
B	4	4	4 5	4	<u>4</u> <u>3</u>	4	<u>4</u> <u>3</u>	<u>4</u>	<u>4</u>	5	5	S-L 47	I	3-2	4-2	931	23Y	
C	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>4</u>	5	5 4	S-L-M 47	I	3-2	3-2	931	23Y	

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply instructions for the operation of office machines, and for 4141-110 BOOKKEEPING-MACHINE OPERATOR, a knowledge of the principles and applications of bookkeeping;
- numerical ability to make arithmetic calculations quickly and accurately;
- form perception to note pertinent detail or slight differences in shapes and shadings and width and thickness of lines in graphic or tabular material, such as coded messages, photocompositions and banking records;
- clerical perception to observe pertinent details in typewritten or handwritten material, and to note arithmetic discrepancies in financial statements and accounts or to avoid errors in arithmetic calculations;
- eye-hand-finger co-ordination in making precise movements with speed and accuracy while simultaneously operating office machines;
- finger dexterity to manipulate office-machine keyboards and levers quickly and accurately.

B

- learning ability to understand and apply instructions for the operation of office machines;

- form perception to note pertinent details or slight differences in shapes and shading and width and thickness of lines in pictorial or graphic material, such as microfilm records, address labels, or photocopied material;
- eye-hand-finger co-ordination for loading materials into office machines while rapidly and accurately setting machine controls, stops and guides;
- finger dexterity to move the fingers and insert documents in office machines rapidly while simultaneously adjusting and operating these machines;
- manual dexterity to move the hands skilfully and easily when sorting and counting money, searching and retrieving information and positioning material in machines.

C

- learning ability to understand the principles and operation of duplicating, embossing, stamping and related office machines;
- form perception to note pertinent details or slight differences in shapes or shadings in duplicated, embossed, or stamped records;
- eye-hand-finger co-ordination to insert documents or paper in machines, while adjusting and operating these machines;
- manual dexterity to move the hands easily and skilfully, when positioning plates and other material in machines.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- business college training in operating office machines; or

- three months to one year of on-the-job training.

B and C

- eight to ten years of general education;
- from a short demonstration up to six months of on-the-job training, depending upon the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to higher levels of responsibility within their respective cluster. Those with supervisory ability may advance to 4140-114 SUPERVISOR, OFFICE-MACHINE OPERATORS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Some workers in this chapter may transfer to other occupations within their respective cluster for which skills and experience are similar. Others may transfer to some occupations in Chapter 4131, BOOKKEEPERS AND ACCOUNTING CLERKS, because of similarity of work performed.

Workers in Clusters B and C may transfer to some occupations in Cluster A, such as those of adding or calculating machine operators, while others may transfer to other occupations within these clusters because of similarities in work performed.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

A

- non-social work, carried on in relation to the operation of office machines and equipment;
- dealing with things and objects such as office machines and records;
- concrete and organized work.

B and C

- non-social work, carried on in relation to the relatively simple operation of office machines that sort and count currency, apply address labels, or seal and stamp envelopes;
- routine, concrete and organized work, such as opening and sealing mail on a daily basis;
- dealing with things and objects normally found in a general office.

Temperaments

- repetitive or short-cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems;
- the precise attainment of set standards of accuracy.

ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS

WORK PERFORMED

This chapter includes occupations concerned with operating electronic and electromechanical machines to convert data from one form to another. Worker functions include: operating and tending electronic data-processing equipment; manipulating control switches, guides and keys; transcribing data onto punch cards; compiling clerical records; and comparing punch cards to remove those incorrectly punched. Work activities include: selecting and loading input and output units with materials; sorting and photographing cheques; placing punched cards in machine; wiring plugboards to make circuit connections according to prepared diagrams; attaching punched-program cards around machine drum to control duplication and spacing of constant data; typing data according to copy; and collecting cards to be sorted.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

4143-110	COMPUTER OPERATOR (clerical)	4	6
4143-114	COMPUTER-PERIPHERAL EQUIPMENT OPERATOR (clerical)	4	5

B

GED SVP

4143-122	VERIFIER OPERATOR (clerical)	3	5
4143-134	KEY-PUNCH OPERATOR (clerical)	3	4

GED SVP

4143-142	REMOTE COMPUTER TERMINAL OPERATOR (clerical)	3	3
----------	---	---	---

C

GED SVP

4143-118	MAGNETIC INK CHARACTER RECOGNITION CLERK (clerical)	3	5
4143-126	CARD-TAPE-CONVERTER OPERATOR (clerical)	3	4

GED SVP

4143-130	HIGH-SPEED-PRINTER OPERATOR (clerical)	3	4
4143-138	TABULATING-MACHINE OPERATOR (clerical)	3	4
4143-146	SORTING-MACHINE TENDER (clerical)	3	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	<u>3</u>	3	3	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	4		L 47	I	4	6-5	91	1Y
B	<u>3</u>	3	4	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5		S 47	I	3	5-3	931	23Y
C	<u>3</u>	3	4	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	4		S-L 47	I	3	5-3	931	23Y
	<u>4</u>	4	3		<u>4</u>	4					5							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply instructions for operating electronic and electromechanical data-processing machines;
- form perception to note pertinent detail in graphic and tabular material used in data-processing records;

- clerical perception to observe pertinent detail in verbal or tabular material contained in instructions and documents;
- eye-hand-finger co-ordination to make precise movements rapidly and accurately while operating machines;

- finger dexterity to rapidly and accurately manipulate cards, reels of tape and key-punch and other machines;
- manual dexterity to move hands easily and skilfully when wiring plugboards, and operating and tending equipment;
- capacity to reach for, lift, handle and feel equipment such as wires for plugboards;
- near visual acuity to wire plugboards and make circuit connections and distinguish colours.

Workers in Cluster A also require:

- verbal ability to understand meaning of words and ideas associated with them, and to use them effectively in the field of electronic data processing.

Workers in Cluster C also require:

- spatial perception to visualize spacing when pressing switches to start card-tape converters, to photograph cheques and vouchers, and wire plugboards.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- twelve years of general education, preferably with emphasis on mathematics;
- six months to two years of on-the-job training combined with experience in operating related electric and electronic accounting equipment.

B

- ten to twelve years of general education;
- three months to one year of on-the-job training with previous experience in typing.

C

- ten to twelve years of general education;
- three months to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Experienced workers in this cluster with supervisory abilities and a potential for leadership may advance to 4140-110 SUPERVISOR, ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

B

Experienced workers with ability may advance to more responsible positions in key-punch units.

C

Workers in this cluster who gain experience and further training may advance to occupations in Cluster A.

Transfer

Transfer for workers in this chapter may be to other occupations within their respective clusters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- work carried on in relation to electronic data-processing machines, and techniques which are usually non-social in nature;
- dealing with things and objects.

Temperaments

- a variety of duties often characterized by frequent change;
- attaining set limits and standards of accuracy.

B and C

Interests

- non-social work carried on in relation to processes, machines and techniques;
- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures and sequences;
- doing things only under specific instruction;
- attaining high standards of accuracy.

PRODUCTION CLERKS

WORK PERFORMED

This chapter includes occupations concerned with arranging and expediting the flow of work and materials to ensure that production and time quotas are met. Worker functions include: co-ordinating flow of materials and work within, or between production departme compiling, collating, and recording information for production schedules, reports and records; and communi with customers and distributors. Work activities include: examining orders for goods and services, reviewing and maintaining inventories an production records, preparing production schedules, and routing and delivering material, parts and assembl for fabrication or repair.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
4151-110	PRODUCTION CO-ORDINATOR (clerical)	4	7	4151-114	MATERIAL CO-ORDINATOR (clerical)	4	6
				4151-118	MOTOR VEHICLE REPAIR CO- ORDINATOR (motor vehicle)	4	6

B

		GED	SVP			GED	SVP
4151-122	CONTROL CLERK, ADVERTISING (bus. serv.)	4	6	4151-158	INDUSTRIAL-ORDER- COMPLETION CLERK (clerical)	4	4
4151-126	PROGRAM SCHEDULER (broadcast., motion pic. & stage)	4	5	4151-162	PROGRESS CLERK, CONSTRUCTION (clerical)	3	4
4151-130	CONTROL CLERK, DATA- PROCESSING (clerical)	4	5	4151-166	AIRCRAFT-RECORDS CLERK (air & space-craft; air trans.)	3	4
4151-134	PRODUCTION CLERK (clerical)	4	5	4151-170	ASSIGNMENT CLERK (telecom.)	3	4
4151-138	MATERIAL ESTIMATOR, CONSTRUCTION (clerical)	4	5	4151-174	EXPEDITER, PURCHASING (clerical)	3	4
4151-142	OVERHAUL PLANNER (air & space-craft)	4	5	4151-178	SERVICE-WORK-ORDER CLERK (clerical; elec. power; utilities, n.e.c.)	3	4
8793-122T	MEASUREMAN (struct., plate & ornam. metal)	3	6	4151-182	VEHICLE-SERVICE SCHEDULER (clerical)	3	4
4151-146	RECORDER, STEEL MILL (clerical)	3	5	4151-186	RECORDING CLERK, CASTINGS (iron & steel)	3	4
4151-150	JOB ORDER CLERK, MANUFACTURING (clerical)	3	5	4151-190	SCHEDULE CLERK (print. & pub.)	3	4
4151-154	CLERK, CABLE TRANSFER (telecom.)	3	5	4151-192	ORDER CLERK, PRINTING PLATES (print. & pub.)	3	3
				4151-194	ESTIMATOR, FABRIC (garment & fabric)	3	3

C

		GED	SVP			GED	SVP
4151-198	TALLYMAN (clerical)	2	2	4151-202	TICKET PREPARER, MANUFACTURING (clerical)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S-L 4567	I	4	7-6	12	09514
B	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S-L 4567	I	4-3	6-3	12	025
			4														
C	4	<u>4</u>	<u>4</u>	5	4	<u>3</u>	4	4	4	5	5	L 47	I	2	2	31	20
						4											

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply instructions concerned with expediting the flow of work and materials, and to make reasoned judgments concerning changes required in schedules;
- verbal ability to understand meanings of words and ideas associated with them, and to use them effect when reviewing production schedules and work orders, reporting progress of operations and communicating with workers;

- numerical ability to carry out arithmetic processes quickly and accurately, such as preparing estimates of amounts of material and labour required, and calculating percentages;
- clerical perception to perceive pertinent details in work orders, statistical reports and records;
- near visual acuity for examining and compiling operations' schedules and work records.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A and B

- ten to twelve years of general education;
- from three months to two years of on-the-job training;

- up to two years of related experience in accounting, purchasing, or production and work control.

C

- eight to ten years of general education;
- up to thirty days of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be to a higher level of responsibility in the area of production control. Some production clerks may advance to sales occupations in the company providing they possess the necessary qualifications.

Others, with some additional training, may advance to occupations such as 2165-238 INDUSTRIAL-ENGINEERING TECHNICIAN, or from occupations in Cluster C to occupations in Cluster B, and from occupations in Cluster B to those in Cluster A. Experienced Production Clerks with supervisory ability may advance to 4150-110 SUPERVISOR, PRODUCTION CLERK. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Transfers are normally limited to other occupations in this chapter. Other transfer possibilities, because of the similarity in work performed, would be to 4137-110 STATISTICAL CLERK or to occupations in Chapter 4153 SHIPPING AND RECEIVING CLERKS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects;
- business contact with people.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria, such as the rescheduling of processes to eliminate duplicate machine setups, based on experience;
- dealing with people in actual job duties, beyond giving and receiving instructions;
- a variety of duties often characterized by frequent change.

B

Interests

- dealing with things and objects;
- business contact with people.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- repetitive or short-cycle operations carried out according to set procedures or sequences;
- dealing with people in actual job duties beyond giving and receiving instructions.

C

Interests

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short-cycle operations carried out according to set procedures or sequences;
- the evaluation of information against measurable or verifiable criteria.

SHIPPING AND RECEIVING CLERKS

WORK PERFORMED

This chapter includes occupations concerned with shipping and receiving goods. Worker functions include: handling goods shipped and received; copying and recording details of shipments; computing amounts of shipments; and compiling data for documents. Work activities include: assembling, packing, addressing, stamping, loading and shipping goods; tracing and expediting delayed shipments and receiving, unpacking, sorting, verifying, and recording incoming goods.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
4153-110	IMPORT-FREIGHT CLERK (water trans.)	3	5	4153-122	RECEIVING CLERK (clerical)	3	4
4153-114	EXPORT-BOOKING CLERK (water trans.)	3	5	4152-126	SHIPPING CLERK (clerical)	3	4
4153-118	SHIPPING AND RECEIVING CLERK (clerical)	3	5	4153-130	CARGO-LOCATION MAN (water trans.)	3	4
				4153-134	CLAIM CLERK, LOST OR DAMAGED GOODS (clerical)	3	4

B

		GED	SVP			GED	SVP
4153-138	BAGGAGEMAN (motor trans.; rail trans.; water trans.)	3	3	4153-146	VAULTMAN (bus. serv.)	2	2
4153-142	ROUTE SUPPLY AND RETURN MAN (clerical)	3	3	4153-150	SORTING AND ROUTING CLERK (clerical)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>4</u>	5	5	S-M 47	I	3	5-4	12	150
					4		4	3									
B	4	4	<u>4</u>	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	4	5	L-H 34567	I	3-2	3-2	123	20
	3					<u>4</u>	<u>3</u>			5	4	M 347					23

APTITUDES AND CAPACITIES

Workers in Cluster A require:

- learning ability to understand and apply instructions and procedures for shipping and receiving goods, and reasoning ability to make judgments concerning the selection of appropriate shipping routes and facilities;
- verbal ability to effectively communicate with others orally and in writing, to arrange for the shipment of goods, determine date of arrival of shipments or rectify damages or shortages;
- numerical ability to count and sort articles, and to perform arithmetic computations involving the use of fractions and decimals, for shipping bills, and storage and demurrage charges;
- clerical perception for details when comparing quantities and identification numbers on invoices;
- eye-hand-finger co-ordination to rapidly and accurately sort and handle goods;

- manual dexterity to grasp, place and turn articles when loading, packing and unpacking shipments;
- strength to perform sedentary to medium work requiring lifting of items weighing up to twenty-five pounds;
- good vision for close-up work to distinguish size, colour, and texture of goods.

Workers in Cluster B require:

- learning ability to understand and apply instructions concerning shipping, receiving, and issuing baggage, allocating products to driver-salesmen, and preparing delivery instructions;
- numerical ability to sort and count articles rapidly, and to make change;
- clerical perception to note pertinent detail in delivery sheets, routing slips and identification labels;
- eye-hand-finger co-ordination to sort and handle goods while reading and completing shipping documents;

- manual dexterity to grasp, place, and turn articles when loading, packing or unpacking items;
- strength to perform light to heavy work, such as lifting and carrying sacks of material and baggage weighing up to 50 pounds, and pushing hand trucks loaded with cartons weighing up to 1,500 pounds;

- agility to stoop, kneel or crouch when moving boxes of material from shelves or storage areas, and when handling baggage and parcels;
- visual acuity to read information, and to note differences in colour and texture, and a good field of vision when searching for articles in storage areas.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;

- from three months to one year of on-the-job training.

B

- eight to ten years of general education;
- from one to three months of on-the-job training

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to positions requiring higher skills and responsibility in their respective cluster, or from Cluster B to Cluster A. Those who have supervisory potential may advance to appropriate occupations in Volume I, Unit Group 4150, SUPERVISORS: MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Workers in these clusters may transfer to some related clerical positions requiring similar skills in Major Group 41, CLERICAL AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects;
- business contact with people, such as informing customers of dates of arrival of goods, and reasons for delay or shortages, and making delivery arrangements to the satisfaction of customers.

Temperaments

- a variety of duties often characterized by frequent change, such as the need to interrupt other work in order to meet shipping or receiving schedules;
- dealing with people in actual job duties beyond giving and receiving instructions, such as communicating with consignees or shippers to give advice or explain causes of delay and thereby maintaining good will;
- the evaluation of information against measurable or verifiable criteria, such as checking quantities against orders and allocating orders to proper departments.

B

Interests

- dealing with things and objects;
- business contact with people, such as providing rate and schedule information to customers;
- routine, concrete and organized work, such as handling and retrieving baggage, and counting and routing sealed money bags and other items to establishments.

Temperaments

- repetitive or short cycle operations carried out according to set procedures;
- the evaluation of information against measurable or verifiable criteria.

STOCK CLERKS AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with receiving, storing and distributing supplies, material and equipment, taking inventories, estimating future requirements, keeping records, and pricing and requisitioning stock. Worker functions include: compiling and comparing stock records to prepare requisitions, maintaining inventories and check lists, and handling supplies manually, or using special material handling devices to assist in moving, lifting and carrying items. Work activities include: preparing quantity and delivery schedules of materials and parts; identifying items by part number and nomenclature for requisition and purchase; preparing purchase orders and maintaining records of items purchased; receiving, storing and issuing supplies, material and equipment, and maintaining stock location systems and perpetual inventories of supplies and equipment issued.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4155-110	PRODUCTION-SUPPLY CLERK (clerical)	4	6	4155-146	INVENTORY CLERK (clerical)	3	4
4155-114	PARTS LISTER (clerical)	3	5	4155-150	SALVAGE CLERK (clerical)	3	4
4155-118	PROPERTIES CUSTODIAN (broadcast.; motion pic. & stage)	3	5	4155-154	LABORATORY CLERK (clerical)	3	4
4155-122	PURCHASING CLERK (clerical)	4	4	4155-158	KITCHEN-STOCK CLERK (clerical)	3	4
4155-126	STOREMAN (clerical)	3	5	4155-162	CHECKER, INVOICE AND ORDER (clerical)	3	3
4155-130	STOCK-RECORDS CLERK (clerical)	3	5	4155-166	MAIL-ORDER FILLER (ret. trade; whole. trade)	3	3
4155-134	MAGAZINE KEEPER (clerical)	3	4	4155-170	TOOTH CLERK (medical)	3	3
4155-138	PRESCRIPTION CLERK, OPTICAL GOODS (scient. & ind. equip., n.e.c.)	3	4	4155-174	TRANSFORMER-STOCKROOM MAN (elec. power)	3	3
4155-142	TOOL-CRIB ATTENDANT (clerical)	3	4	4155-178	LINEN-ROOM ATTENDANT (clerical)	2	3
				4155-182	CAR SUPPLIER (rail trans.)	2	3

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	<u>3</u>	<u>4</u>	4	4	<u>3</u>	4	4	4	5	4	L-M 347	I	4-2	6-3	13	20
<u>4</u>	4	<u>3</u>		3						5						

APTITUDES AND CAPACITIES

Stock clerks require:

- learning ability to understand and apply the basic principles and procedures of record keeping, inventory control and stock requisitioning;
- verbal ability to present information clearly, either orally or in writing, when ordering supplies, allocating parts and material to specific departments and explaining shortages or discrepancies;
- numerical ability to perform arithmetic calculations quickly and accurately when preparing inventories, estimating requirements, pricing stock and maintaining stock balances on ledger cards;
- clerical perception to observe pertinent detail in verbal or tabular material, such as comparing part numbers to identical numbers on

shop orders and recording data related to physical inventories for stock, tools and equipment;

- ability to perform light to medium work requiring lifting of packages up to fifty pounds and pushing packages and parts weighing up to one hundred pounds;
- ability to stoop, kneel or crouch when packing, piling and storing materials, parts and equipment;
- ability to reach, handle, finger or feel textiles, hardware and other items to determine size, shape and texture;
- near visual acuity to read requisitions, locate stock and examine materials for identification, size, colour, defects and other characteristics.

TRAINING AND ENTRY REQUIREMENTS

Stock Clerks normally require:

- ten to twelve years of general education;
- three months to two years of on-the-job training, or
- one to two years of related experience as a stock boy or order filler, and a short period of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers may advance to other positions within this chapter requiring higher skills and responsibility. Those who have supervisory potential may advance to appropriate occupations in Volume I, Unit Group 4150, SUPERVISORS: MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Stock clerks' positions are often entrance level jobs, and provide opportunity to learn about the business of a particular establishment. This practice creates opportunities for transfer to other occupations in Minor Group 415, MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to stock clerk occupations require significant interests in and dispositions for work involving the following:

Interests

- dealing with things and objects;
- routine, concrete and organized work, such as receiving, storing and distributing materials, tools and equipment according to requisitions and inventories.

Temperaments

- repetitive or short-cycle operations carried out according to set procedures or sequences, such as receiving materials and charging them on inventory and stock cards, posting issues, and calculating remaining balances and lead times on purchase orders and requisitions;
- evaluating information, using measurable or verifiable criteria, such as selecting materials to be issued or purchased on the basis of data obtained from manufacturers' catalogues or machine parts lists.

WEIGHERS

WORK PERFORMED

This chapter includes occupations concerned with weighing materials, products, railway cars and other vehicles and keeping relevant records. Worker functions include: performing arithmetic computations; recording, transcribing, entering or posting data; and manipulating levers and weights, or dials, push buttons and other controls of weigh scales depending upon the object or material to be weighed. Work activities include: weighing and inspecting motor vehicles at highway weighing stations to determine compliance with statutory weight limits and other provisions of provincial law; reading indicators to determine gross weights; weighing drug preparations, using fine scales and analytical or torsion balances; weighing railway cars using electronic beam scales; weighing and computing numbers of small parts using ratio-balance scales; and recording details of goods weighed, and submitting reports and returns.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4157-110	HIGHWAY-SCALE OPERATOR (gov. serv.)	3	4	4157-126	WEIGHER-COUNTER (clerical)	2	3
4157-114	WEIGHER, TRUCK (clerical)	3	3	4157-130	WEIGHER, PRODUCTION (clerical)	2	3
4157-118	WEIGHER, DRUG AND TOILET GOODS (clerical)	3	3	4157-134	WEIGHER (clerical)	2	2
4157-122	WEIGHER, RAILWAY CAR (rail trans.)	2	3	4157-138	TARE MAN (sugar)	2	2
				4157-142	WEIGHER, LIVESTOCK (clerical)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temp.
G	V	N	S	P	Q	K	F	M	E	C							
<u>4</u>	3	<u>4</u>	4	<u>4</u>	<u>4</u>	4	4	4	5	5	L-M	47	I	3-2	4-2	139	20Y
3		<u>3</u>			<u>3</u>	3	3										

APTITUDES AND CAPACITIES

Weighers require:

- learning ability to understand the operation of various types of weigh scales or balances, and to apply the regulations concerning the weighing of vehicles and materials;
- numerical ability to carry out arithmetic processes quickly and accurately to compute weights of vehicles or containers, obtain the net weight or to estimate quantity-by weight;
- form perception to make visual comparisons and discriminations when weighing containers, materials and parts and to observe impurities or other differences such as lumps, discolouration or spoilage;

- clerical perception to correctly read figures when weighing or recording weight, grade and price of material, and to avoid computational errors;
- strength to perform medium work, such as that required to lift weights up to fifty pounds and to tilt boxes weighing from fifty to one hundred and fifty pounds, when loading them on or off conveyors or scale platforms;
- capacity to reach to operate controls on scales or balances, and to move material;
- visual acuity (near and far) and accommodation for reading figures on scale indicators, charts or tickets, and for observing conveyor operations.

TRAINING AND ENTRY REQUIREMENTS

Weighers normally require:

- six to nine years of general education;

- from four weeks up to six months of on-the-job training, depending on the complexity of the work.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Experienced workers with supervisory abilities may advance to appropriate occupations in Volume I, Unit Group 4150, SUPERVISORS: MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Transfers are limited. Some weighers with a knowledge of production processes may transfer to processing or fabricating occupations in their establishments.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities that are non-social in nature and are carried on in relation to machines and techniques;
- routine, concrete and organized work;
- dealing with things and objects

Temperaments

- evaluating information against measurable or verifiable criteria;
- attaining set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures.

GROUP 4159

MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities such as examining orders for goods and services, receiving, counting, sorting, shipping and distributing goods and accounting for stock.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
4159-110	ESTIMATOR, JEWELLERY (jewellery & precious metal prod.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>3</u>	3	4	4	4	5	3	S 457	I	4	6	21	905
4159-114	TELEPHONE-EQUIPMENT APPRAISER (telecom.)	3	4	4	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I	4	4	19	0Y
4159-118	WARRANTY CLERK (clerical)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 47	I	3	5	31	20Y
4159-122	TANK CALIBRATOR (metal stamp. press. & coat.)	3	4	4	4	<u>3</u>	<u>4</u>	4	4	4	5	5	M 2347	B 4	3	4	31	23Y
4159-126	ROAD CLERK (rail trans.)	<u>3</u>	4	3	5	4	<u>3</u>	<u>3</u>	3	4	5	5	L 47	I	3	4	31	23Y
4159-134	WATER-METER READER (water works)	3	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>4</u>	5	5	L 47	B	3	3	319	2Y
4159-138	SAMPLE-CONTROL CLERK (clerical)	3	3	4	5	<u>4</u>	<u>2</u>	4	4	4	5	5	L 47	I	3	3	31	23Y
4159-142	WRAPPER-COUNTER (tobacco)	4	4	<u>4</u>	5	4	<u>3</u>	<u>4</u>	<u>4</u>	<u>4</u>	5	5	L 47	I	3	3	31	23Y
4159-146	DRESS CHECKER (ret. trade)	4	4	<u>4</u>	5	4	<u>4</u>	4	4	4	5	5	L 47	I	2	2	321	23
4159-150	TICKET CHECKER (tobacco)	4	4	4	5	<u>4</u>	<u>3</u>	<u>4</u>	4	4	5	5	L 47	I 7	2	2	31	23Y
4159-154	PRICE MARKER (ret. trade; whole. trade)	4	4	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	31	23Y
4159-158	SORTER, UPHOLSTERY PARTS (furn.)	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	4	4	<u>4</u>	4	<u>4</u>	L 47	I	2	2	31	23Y
4159-162	SORTER, DEFECTIVE GARMENTS (garment & fabric)	4	4	4	5	<u>4</u>	4	4	4	<u>4</u>	4	5	L 47	I	2	2	31	23

MEDICAL-RECORD LIBRARIANS

WORK PERFORMED

This chapter includes occupations concerned with recording, classifying and filing medical records and related data in hospitals and other medical institutions. Worker functions include: compiling medical records and providing information to medical staff. Work activities include: examining, classifying, coding, sorting, typing and filing medical records, correspondence and other data; up-dating files; searching for and providing information and preparing special reports.

LIST OF OCCUPATIONAL TITLES

		GED	SVP
4161-110	MEDICAL-RECORD LIBRARIAN (medical)	4	5

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	3	4	4	<u>2</u>	<u>4</u>	<u>4</u>	4	5	4		L 4567	I	4	5	63	0Y5

APTITUDES AND CAPACITIES

Medical-Record Librarians require:

- learning ability to acquire and apply a thorough knowledge of the principles governing the coding, classifying, compiling and recording of data for medical records and statistical reports;
- verbal ability to understand the meanings of medical terminology and ideas associated with them, and to use them effectively when communicating orally or in writing with medical personnel;
- clerical perception to note pertinent details in narrative or tabular material, and to avoid errors in transcribing data from medical records, or when compiling statistics;
- eye-hand co-ordination and finger dexterity for typing and filing tasks;
- near-visual acuity and colour vision.

TRAINING AND ENTRY REQUIREMENTS

Medical-Record Librarians require:

- secondary school graduation, at the university entrance level, with an emphasis on science, mathematics, language and with proficiency in typing;
- completion of a medical-record librarians' course given at community colleges, for one to three years depending on the college; or
- completion of a course in a recognized school for medical-record

librarians, in hospitals approved by the Canadian Association of Medical-Record Librarians, usually of one year's duration; or

- completion of a four-year course given at the University of Notre-Dame, Nelson, B.C., leading to a bachelor of science degree, medical-record.

On completion of the training programs, candidates are eligible to write the examinations leading to registration and membership in the Canadian Association of Medical-Record Librarians.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Medical-Record Librarians may advance to positions of greater responsibility in establishments where a grading system exists.

Transfer

Medical-Record Librarians may transfer to Medical Secretary under 4111-110 in Volume I provided they take additional training required to qualify for this specialty.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of Medical-Record Librarian, require significant interests in, and dispositions for work involving the following:

Interests

- activities concerned with people and the communication of ideas; such as maintaining medical records for use by hospital personnel;
- concrete and organized work according to established procedures.

Temperaments

- the evaluation of information against measurable or verifiable criteria, to arrive at decisions;
- the precise attainment of set limits or standards of accuracy;
- dealing with people in actual job duties, beyond giving and receiving instructions, such as contacting responsible medical personnel regarding new data received for or derived from medical records.

LIBRARY AND FILE CLERKS

WORK PERFORMED

This chapter includes occupations concerned with recording, classifying and filing records, publications, correspondence, audio-visual and other data in libraries, and offices. Worker functions include: compiling and recording library and other office records; providing information to people concerning books, publications and other recorded data; and handling materials when filing documents, shelving books or displaying articles. Work activities include: examining, classifying, sorting and filing records, correspondence and other data; up-dating library catalogues, file indexes and records; searching for and providing information, and issuing, receiving, recording, sorting and shelving books, films and phonograph records.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
4161-114	BRAND RECORDER (gov. serv.)	3	5	4161-118	LIBRARY CLERK (educ.)	4	4

B

		GED	SVP			GED	SVP
4161-122	FILE AND CLASSIFICATION CLERK (clerical)	3	5	4161-134	FILE CLERK (clerical)	3	3
4161-126	TAPE LIBRARIAN (clerical)	4	4	4161-138	LIBRARY CLERK, FILMS AND RECORDINGS (clerical)	3	3
4161-130	CUT MAN (clerical)	3	4				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	4	4	3	<u>2</u>	3	4	4	4	4	SL 34567	I	4-3	5-4	123	0Y5
						4				5	5						
B	<u>3</u>	3	4	4	4	<u>3</u>	4	4	4	4	4	L 2347	I	4-3	5-3	13	0Y
	<u>4</u>				3		3			5	5						20

APTITUDES AND CAPACITIES

Library and File Clerks require:

- learning ability to understand and apply general office procedures and library indexing or classifying techniques;
- verbal ability, especially important for 4161-118 LIBRARY CLERK, to comprehend terminology and to communicate effectively with users of library facilities;
- clerical perception to transcribe or check entries such as names, titles,

and numbers, to file material in proper sequence, and to prepare accurate reports;

- capacity to climb ladders when shelving or retrieving books from high shelves or stacks;
- capacity to stoop or kneel when shelving or filing records and documents in cabinets or low shelves;
- near and far visual acuity and colour vision.

TRAINING AND ENTRY REQUIREMENTS

Library and File Clerks normally require:

- eleven to twelve years of general education;
- from one month to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for experienced workers in this chapter may be to higher levels within the occupation. Some with supervisory ability may advance to 4160-110 SUPERVISOR, LIBRARY AND FILE CLERKS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Transfer may be to other occupations within this chapter, provided the necessary qualifications are met.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- routine, concrete and organized work;

Additionally for Cluster A:

- business contact with people.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits and standards of accuracy.

Additionally, for Cluster A:

- dealing with people in actual job duties beyond giving and receiving instructions, such as reviewing records to compile lists of overdue books and sending overdue notices to borrowers.

Additionally, for Cluster B:

- repetitive or short-cycle operations carried out according to set procedures or sequences.

LIBRARY, FILE, CORRESPONDENCE CLERKS AND RELATED OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities such as preparing and composing correspondence; examining documents to obtain, verify and record information; recording, classifying and filing correspondence, publications and other data in libraries and offices; and doing related work.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
4169-110	FINGERPRINT CLASSIFIER (gov. serv.)	<u>3</u>	3	3	3	<u>2</u>	<u>3</u>	3	3	4	5	5	S 457	17	4	7	719	0Y
4169-114	CREDITS-ASSESSMENT CLERK (educ.)	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 567	I	5	6	26	590
4169-118	CUSTOMS CLERK (gov. serv.)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 4567	I	4	6	21	50Y
4169-122	CORRESPONDENCE CLERK (clerical)	<u>3</u>	<u>3</u>	4	5	4	<u>3</u>	3	3	4	5	5	S 47	I	4	4	23	91
4169-126	CIRCULATION CLERK, NEWSPAPER (print. & pub.)	<u>3</u>	<u>3</u>	<u>4</u>	5	4	<u>3</u>	4	4	4	5	5	S 47	I	3	5	31	23Y
4169-130	READER (bus. serv.; clerical)	<u>3</u>	<u>3</u>	4	5	4	3	4	4	4	5	5	S 47	I	3	4	31	29
4169-134	METER-RECORDS CLERK (elec. power; utilities, n.e.c.)	<u>3</u>	<u>3</u>	3	5	4	<u>3</u>	3	3	4	5	5	S 47	I	3	4	231	23Y
4169-138	CHECKER, RECORDED DATA (clerical)	<u>3</u>	3	4	5	4	<u>2</u>	4	4	4	5	5	S 47	I	3	4	31	23Y
4169-142	SALES-PROMOTION CLERK (clerical)	<u>3</u>	<u>3</u>	4	5	4	<u>3</u>	3	3	4	5	5	S 4567	I	3	2	231	235
4169-146	SORTER (clerical)	4	4	5	5	<u>3</u>	3	<u>4</u>	<u>4</u>	4	5	4	S 47	I	2	3	31	23Y
4169-150	FINGERPRINT CLERK (gov. serv.)	<u>4</u>	4	5	4	4	<u>3</u>	<u>4</u>	4	4	5	5	L 457	I	2	2	31	23Y
4169-154	SAMPLEMAN, PAPER (pulp & paper)	4	4	4	4	4	<u>3</u>	<u>4</u>	4	4	5	4	L 47	I	2	2	31	23Y
4169-158	PAGE, LIBRARY (educ.)	4	<u>4</u>	4	5	4	<u>3</u>	<u>4</u>	4	4	4	4	L 2347	I	2	2	31	23Y
4169-162	TOLL-RATING CLERK (telecom.)	<u>4</u>	4	4	4	<u>4</u>	<u>3</u>	<u>4</u>	<u>4</u>	4	5	5	S 47	I	2	2	31	23Y

RECEPTIONISTS AND INFORMATION CLERKS

WORK PERFORMED

This chapter includes occupations concerned with receiving and giving information to clients, customers and the general public in offices and establishments. Worker functions include: speaking to clients and customers to provide information on business or services; compiling and recording data; and operating office equipment, such as typewriters and adding machines. Work activities include: making appointments, maintaining files, and answering inquiries by telephone, by correspondence or in person.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4171-110	HOSPITAL-ADMITTING CLERK (medical)	3	5	4171-118	RECEPTIONIST (clerical)	3	4*
4171-114	PRICE-INFORMATION CLERK (clerical)	3	5	4171-122	INFORMATION CLERK (clerical)	3	4

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	5		S-L 4567	I	3	5-4	2	50
						4	4										

APTITUDES AND CAPACITIES

Receptionists and Information Clerks require:

- learning ability to understand instructions and follow office procedures, and ability to exercise good judgment;
- verbal ability to communicate effectively with people at all levels, when giving or obtaining information;
- numerical ability for 4171-114 PRICE-INFORMATION CLERK

to rapidly and accurately make computations for price quotations and bills;

- clerical perception to observe pertinent detail in written material, and to avoid errors when transcribing data;
- eye-hand-finger co-ordination to perform typing and filing duties, rapidly and accurately.

TRAINING AND ENTRY REQUIREMENTS

Receptionists and information clerks normally require:

- ten or more years of general education;

- up to one year of training in commercial subjects taken in the public school system or private business or secretarial college;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Receptionists and information clerks who have supervisory potential may advance to 4170-122 SUPERVISOR, RECEPTIONISTS AND INFORMATION CLERKS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile. Advancement may also be to more responsible clerical positions in Major Group 41, CLERICAL AND RELATED OCCUPATIONS.

Transfer

Receptionists and Information Clerks may transfer to occupations within this chapter, or to similar occupations in a different environment, such as that of 4194-110 HOTEL CLERK or 4193-122 TRAVEL CLERK.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to receptionist and information clerk occupations require significant interests in, and dispositions for work involving:

Interests

- business contact with people.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- using proper tact and discretion in selecting appropriate questions, and giving suitable answers;
- the evaluation of information against measurable or verifiable criteria.

OTHER REQUIREMENTS

An alert, well-groomed appearance, a good memory, pleasant personality, and evidence of tact and diplomacy.

MAIL CARRIERS

WORK PERFORMED

This chapter includes occupations concerned with sorting and delivering mail according to specified routes. Worker functions include: handling mail, records and cash; and transcribing lists of registered mail and cash-on-delivery packages and recording changes of address. Work activities include: sorting mail according to predetermined routes; obtaining receipts for registered mail; and collecting money for cash-on-delivery packages.

LIST OF OCCUPATIONAL TITLES

GED SVP

4172-110 LETTER CARRIER (gov. serv.) 3 3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	<u>4</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	4		M 247	O 6	3	3	132	23
					<u>4</u>												

APTITUDES AND CAPACITIES

- Mail Carriers require:
 - learning ability to understand and apply postal regulations and procedures and to acquire a good knowledge of delivery routes;
 - numerical ability to perform arithmetic computations accurately when collecting money for cash-on-delivery packages and for deficient postage;
 - clerical perception for activities such as deciphering handwriting;
- eye-hand-finger co-ordination to sort and distribute mail;
 - manual dexterity to move the hands easily and skilfully in placing and turning motions;
 - strength to lift and carry up to thirty-five pounds while walking or climbing stairs;
 - agility to avoid hazards such as slippery sidewalks and stairways;
 - adaptability to all weather conditions.

TRAINING AND ENTRY REQUIREMENTS

- Mail Carriers normally require:
- a minimum of eight years of general education; and
 - one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement	Transfer
Mail Carriers with supervisory potential may advance to 4170-110 SUPERVISOR, MAIL AND POSTAL CLERKS. See also Chapter 410, CLERICAL SUPERVISORS for qualifications profile.	Mail Carriers may transfer to occupations in Chapters 4173 MAIL AND POSTAL CLERKS; 4177 MESSENGERS; or 5193 DRIVER-SALESMEN if they possess the necessary qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry into the occupation of Mail Carrier require significant interests in, and dispositions for work involving the following:

- Interests

 - dealing with things and objects;
 - business contact with people.
- Temperaments

 - repetitive or short-cycle operations carried out according to set procedures or sequences;
 - doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

MAIL AND POSTAL CLERKS

WORK PERFORMED

This chapter includes occupations concerned with distributing and processing mail in government and industry. Worker functions include: compiling information concerning postal transactions; computing postal costs and balancing daily totals; speaking to customers to answer inquiries concerning rates and procedures; handling mail to sort and bag it for delivery; and examining mail to ensure compliance with postal regulations and practices. Work activities include: weighing letters and parcels to determine postage; selling postage stamps and money orders; and registering and insuring mail.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
4173-110	GOVERNMENT-POSTAL CLERK, WICKET (gov. serv.)	4	4	4173-118	REVENUE-POSTAL CLERK, WICKET (clerical)	3	3

B

		GED	SVP			GED	SVP
4173-114	EXPRESS CLERK (rail trans.)	3	4	4173-126	MAIL CLERK (clerical)	3	3
4173-122	PARCEL-POST CLERK (clerical)	3	3	4173-130	MAIL SORTER (gov. serv.)	3	3
				4173-134	MAILER (clerical)	2	3

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	4	L-M 4567	I	4-3	4-3	231	25Y
B	<u>3</u>	4	4	4	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	5	5	M-H 47	I	3-2	4-3	31	23Y
	4	3	3			4	3		3	4							

APTITUDES AND CAPACITIES

Mail and Postal Clerks require:

- learning ability to understand and apply postal regulations and procedures;
- clerical perception to record data accurately, and to detect incorrect or incomplete addresses, when sorting letters and parcels;
- eye-hand co-ordination to sort and place mail in appropriate bin or bag, and to stamp mail;
- manual dexterity to sort mail, and use marking devices and postage meters;

- finger dexterity to tie mail in bundles, and to fold and insert letters or circulars into envelopes.

Additionally, for Cluster A:

- verbal ability to comprehend inquiries and postal instructions and to give clear and accurate information to customers;
- numerical ability to compute costs, balance daily transactions, and make change.

TRAINING AND ENTRY REQUIREMENTS

Mail and Postal Clerks normally require:

- eight to eleven years of general education;
- two to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be from some occupations in Cluster B to occupations in Cluster A. Workers in Cluster A may advance to supervisory positions, such as 4170-110 SUPERVISOR, MAIL AND POSTAL CLERKS. See also Chapter 410, CLERICAL SUPERVISORS for qualifications profile.

Transfer

Mail and Postal Clerks may transfer to some occupations in Group 4179 RECEPTION, INFORMATION, MAIL AND MESSAGE DISTRIBUTION OCCUPATIONS, N.E.C.; Chapter 4197 GENERAL OFFICE CLERKS; or Group 4199 OTHER CLERICAL AND RELATED OCCUPATIONS, N.E.C. where similar skills are required.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- business contact with people, such as conducting postal transactions at the wicket of a post office;
- activities of a routine, concrete and organized nature;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences such as selling stamps and money orders;
- dealing with people in actual job duties beyond giving and receiving instructions such as answering inquiries concerning mail regulations;
- the precise attainment of set limits, tolerances, or standards.

B

Interests

- activities of a routine, concrete and organized nature such as weighing letters and packages;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences such as stamping mail using postage meter;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

TELEPHONE OPERATORS

WORK PERFORMED

This chapter includes occupations concerned with operating public and private telephone switchboards to relay incoming, inter-office and outgoing calls. Worker functions include: operating switchboards to connect calls; and speaking to callers to obtain names or numbers of appropriate parties, give information and take messages. Work activities include: observing switchboards for calls and making appropriate connections; ascertaining toll charges according to time recorded; supplying information and assistance for clients; taking special action in cases of emergencies; and keeping related records.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4175-110	TELEPHONE OPERATOR (telecom.)	3	3	4175-118	TELEPHONE-ANSWERING-SERVICE OPERATOR (bus. serv.)	3	3
4175-114	TELEPHONE OPERATOR (clerical)	3	3	4175-122	DIRECTORY-ASSISTANCE OPERATOR (telecom.)	3	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	4	4	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S 4567	I	3	3		23	25 253

APTITUDES AND CAPACITIES

Telephone Operators require:

- learning ability to understand and apply techniques of telephone switchboard operations;
- verbal ability to understand callers requests and to give information clearly, such as rates, messages and numbers;
- form perception to select appropriate cord or switch to make switchboard connections;
- clerical perception to observe details when consulting charts to determine telephone charges and when searching for numbers in directories;

- eye-hand-finger co-ordination to make connections and search through telephone directories and charts;
- finger dexterity to rapidly turn pages of telephone directories, dial numbers or press buttons, and file call records;
- manual dexterity to operate switchboard;
- ability to reach forward to connect switchboard lines and handle directories;
- capacity to hear caller's requests under various line conditions;
- near visual acuity to read charts, directories and time-recording devices.

TRAINING AND ENTRY REQUIREMENTS

Telephone Operators normally require:

- ten years of general education; and

- up to three months on-the-job training under the guidance of a supervisor.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Telephone Operators with supervisory ability may advance to 4170-126 SUPERVISOR, TELEPHONE OPERATORS. See also Chapter 410, CLERICAL SUPERVISORS for qualifications profile.

Transfer

Transfer is normally to occupations within this chapter and to some occupations in Group 4199, OTHER CLERICAL AND RELATED OCCUPATIONS, N.E.C. Some telephone operators may transfer to occupations in Chapter 4171, RECEPTIONISTS AND INFORMATION CLERKS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- routine, concrete and organized work.

Temperaments

- repetitive or short-cycle operations carried out according to set procedures or sequences;
- dealing with people in actual job duties beyond giving and receiving instructions.

MESSENGERS

WORK PERFORMED

This chapter includes occupations concerned with delivering such items as messages, mail, securities and telegrams on foot, bicycle or public conveyance. Worker functions include: serving various personnel by delivering mail and messages; handling mail, cheques, securities, documents and merchandise; compiling lists of items to be collected or delivered; and recording details of items collected and delivered. Work activities include: running errands; sorting, delivering and collecting mail, packages, securities and messages; distributing office supplies to staff, relaying telegrams by telephone; and collecting money for cash-on-delivery packages.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4177-110	MESSENGER, BANK (bank. & finance)	3	4	4177-118	MESSENGER (clerical)	2	3
4177-114	TELEPHONE MESSENGER, TELEGRAMS (telecom.)	3	3	4177-122	DELIVERY BOY (ret. trade)	2	3
				4177-126	TELEGRAPH MESSENGER (telecom.)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	<u>4</u>	4	4	<u>3</u>	4	4	4	<u>4</u>	4	S-M	24567	B 234	3-2	4-2	31	23
3	<u>3</u>				4				<u>5</u>	5							

APTITUDES AND CAPACITIES

Messengers require:

- learning ability to understand and follow work procedures and instructions for deliveries and messages;
- verbal ability, especially important for 4177-114 TELEPHONE MESSENGER, TELEGRAMS to read telegrams, promote sales, quote and explain rates, and aid customer in preparing messages;
- numerical ability to carry out arithmetic processes quickly and

accurately for billing customers, and collecting money from clients for messages and cash-on-delivery orders;

- clerical perception to observe details such as addresses, instructions and digits on rate-classification forms;
- eye-hand-foot co-ordination for messengers riding bicycles;
- capacity to withstand exposure to all kinds of weather conditions for those whose work is out-of-doors.

TRAINING AND ENTRY REQUIREMENTS

Messengers normally require:

- eight to ten years of general education;
- on-the-job training ranging from a short period of demonstration to

six months, depending on the complexity of the employer's organization.

For messengers handling valuables, bonding is normally required.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Messengers who possess supervisory ability may advance to 4170-118 SUPERVISOR, MESSENGERS. See also Chapter 410, CLERICAL SUPERVISORS for qualifications profile. Those who acquire clerical skills may advance to clerical work, such as 4161-134 FILE CLERK, or to some occupations in Chapters 4155, STOCK CLERKS AND RELATED OCCUPATIONS; 4141, OFFICE MACHINE OPERATORS; and 4197, GENERAL OFFICE CLERKS.

Transfer

Transfer may be to other occupations within this chapter, and to 4179-130 OFFICE BOY.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized activities;
- activities involving things and objects.

4177-114 TELEPHONE MESSENGERS, TELEGRAMS also require an interest in activities involving business contact with people.

Temperaments

- repetitive or short-cycle operations carried out according to set procedures or sequences;
- working only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

RECEPTION, INFORMATION, MAIL AND MESSAGE DISTRIBUTION OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities such as distributing information, mail and messages; providing freight or express-rate information; marking quotations on boards in grain brokers office; and preparing, sorting and routing telegrams.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
4179-110	COUNTER CLERK (telecom.)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 4567	I	4	5	231	5Y
4179-114	EXPRESS AND FREIGHT INFORMATION CLERK (motor trans.; rail trans.)	<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 4567	I	3	5	23	25
4179-118	SERVICE MONITOR (telecom.)	<u>3</u>	<u>3</u>	4	5	4	<u>4</u>	4	4	4	5	5	S 46	I	3	5	3	90
4179-122	ROUTING CLERK (telecom.)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5	S 47	I	3	4	32	23
4179-126	BOARD MARKER, GRAIN QUOTATION (bank. & finance)	<u>4</u>	<u>4</u>	4	5	4	<u>3</u>	4	4	4	5	5	L 47	I	2	2	3	23Y
4179-130	OFFICE BOY (clerical)	<u>4</u>	<u>4</u>	4	5	4	4	4	4	4	4	4	L 4567	I	2	2	31	231
4179-134	TUBE OPERATOR (clerical)	4	<u>4</u>	4	4	4	<u>4</u>	4	4	4	5	5	S 47	I	2	2	31	23

COLLECTORS

WORK PERFORMED

This chapter includes occupations concerned with collecting payments on instalments or overdue accounts. Worker functions include: compiling data concerning accounts to be collected; computing balance due; and speaking to clients to solicit payment. Work activities include: tracing location of debtors by phone, in person, or by letter; preparing reports on investigations of lapsed accounts; and maintaining records of accounts collected and those requiring further action.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
4191-110	BILL COLLECTOR (bus. serv.)	3	4	4191-114	LOCATOR (bus. serv.)	3	4
				4191-118	COLLECTION CLERK (clerical)	3	3

B

		GED	SVP
4191-122	CLERK, CUSTOMER SERVICE (ret. trade)	3*	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 567	I-B	3	4-3	2	50
B	<u>4</u>	<u>4</u>	<u>4</u>	4	4	<u>3</u>	4	4	4	5	5	L 567	I	2	2	23	52

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply the procedures used in collection activities, and sound judgment when dealing with people;
- verbal ability to write clear and concise reports and letters and to communicate effectively with clients;

- numerical ability to make arithmetic calculations quickly and accurately;
- clerical perception to avoid errors when posting and computing accounts, corresponding with clients and preparing reports.

TRAINING AND ENTRY REQUIREMENTS

Workers in Cluster A normally require:

- ten to twelve years of general education; and
- one to six months of on-the-job training.

Clerks, Customer Service normally require:

- ten to twelve years of general education; and
- up to one month of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Clerks, Customer Service may advance to occupations in Cluster A, and workers in Cluster A may advance to 4190-114 SUPERVISOR, COLLECTION CLERKS or to other occupations in Major Group 41, CLERICAL AND RELATED OCCUPATIONS, such as 4139-122 CREDIT CLERK, if they have the necessary qualifications. See also Chapter 410, CLERICAL SUPERVISORS for qualifications profile.

Transfer

Transfer is to occupations within the chapter or to some occupations in Chapter 4197, GENERAL OFFICE CLERKS, or Group 4199, OTHER CLERICAL AND RELATED OCCUPATIONS, N.E.C. Some collectors may also transfer to several occupations in Group 4139, BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS, N.E.C., if they have the necessary qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;

Additionally, for 4191-122 CLERK, CUSTOMER SERVICE, routine, concrete and organized work.

Temperaments**A**

- dealing with people in actual job duties, beyond giving and receiving instructions, such as persuading debtors to make payments; and tracing clients by soliciting information from friends, neighbours and relatives;
- the evaluation of information against measurable or verifiable criteria.

B

- dealing with customers in actual job duties beyond giving and receiving instructions;
- repetitive or short-cycle operations carried out according to set procedures or sequences.

ADJUSTERS, CLAIM

WORK PERFORMED

This chapter includes occupations concerned with appraising, investigating, validating and settling claims due to loss, accident and disaster or other cause. Worker functions include: co-ordinating investigations and subsequent settlement or litigation of cases; analyzing causes of accident, loss, damage, or reason for claim to determine liability; compiling information on cases; negotiating settlements; and speaking to claimants or representatives. Work activities include: reviewing and examining claims; determining insurance coverage or allowance due; estimating value of lost or damaged articles; preparing reports of findings; arranging settlements; and recommending litigation.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4192-110	CLAIM ADJUSTER (insur. & real estate)	4	7	4192-118	CLAIM EXAMINER (insur. & real estate)	4	7
4192-114	SERVICE REPRESENTATIVE (bus. serv.)	4	7	4192-122	ADJUSTMENT CLERK (clerical)	4	4
				4192-126	TIRE-ALLOWANCE CLERK (ret. trade; whole. trade)	3	4

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5		S-M 567	I-B	4-3	7-4	261	590
			<u>3</u>	<u>3</u>	<u>4</u>												

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply company practices and procedures for adjusting claims, investigating and settling cases and complaints about unsatisfactory service or defective merchandise;
- verbal ability to understand and use language effectively when interviewing claimants, witnesses and others involved, preparing reports of findings and negotiating settlements;
- numerical ability to accurately carry out arithmetic processes when determining amount of liability, calculating allowances, payments or

reimbursements; monitoring claim costs or estimating value of lost or damaged articles;

- spatial perception to visualize cause of defect in tires, required for 4192-126 TIRE-ALLOWANCE CLERK;
- form perception to determine if motor-vehicle parts are defective as in dealer's claim, required for 4192-114 SERVICE REPRESENTATIVE;
- clerical perception to perceive pertinent detail in verbal or tabular material when reading claims, policies, and reports.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eleven to thirteen years of general education;
- correspondence courses, usually taken over three years, sponsored by the Insurance Institute of Canada plus one year of on-the-job training or equivalent experience for 4192-110 CLAIM ADJUSTER; or

- a combination of on-the-job training and related experience of up to four years for the remaining occupations.

Independent adjusters must have a provincial adjuster's licence; company adjusters are required to be licensed only in some provinces.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter with supervisory ability may advance to 4190-110 SUPERVISOR, CLAIMS ADJUSTERS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Workers may transfer to other occupations within the chapter and to other clerical positions such as those in Chapter 4191, COLLECTORS and 4199, OTHER CLERICAL AND RELATED OCCUPATIONS, N.E.C., for those with the necessary qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people such as negotiating settlements and conducting investigations;
- dealing with people and communicating ideas;
- dealing with things and objects;

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions such as investigating claims, consulting with authorities and interviewing appropriate parties;
- the evaluation of information against judgmental criteria such as negotiating settlements;
- the evaluation of information against measurable or verifiable criteria such as determining company's liability.

TRAVEL CLERKS, TICKET, STATION AND FREIGHT AGENTS

WORK PERFORMED

This chapter includes occupations concerned with clerical duties related to travel and transportation. Worker functions include: co-ordinating customers' itineraries; compiling information regarding accommodations, travel routes, reservations, connections and freight or express shipments; preparing reports of transactions; and speaking to clients to determine and discuss travel and transportation requirements. Work activities include: arranging itineraries and tours; reserving accommodations for travellers; selling airline, bus, railroad and steamship tickets; accepting and releasing express consignments; and routing air-freight shipments.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4193-110	TRAVEL AGENT (clerical)	4	5	4193-122	TRAVEL CLERK (clerical)	4	4
4193-114	RESERVATION CLERK (clerical)	4	4	4193-126	CARGO AGENT (air trans.)	3	4
4193-118	TICKET CLERK (air trans.; motor trans.; rail trains.; water trans.)	4	4	4193-130	RAIL-EXPRESS CLERK (rail. trans.)	3	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S-M	4567	I	4-3	5-3	26 23	501 50

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply procedures and practices used in travel and transportation transactions such as air, train, bus and ship routes and rates, accommodations available to travellers, medical and visa requirements, regulations covering import and export of goods, customs clearances, tariffs and duty rates;
- verbal ability to understand and clearly explain itineraries, connections, rates, tours, points of interest, services and shipping information, and to answer inquiries and make suggestions by phone, mail or in person;

- numerical ability to carry out arithmetic processes rapidly and accurately when calculating fares, hotel and freight rates;
- clerical ability to perceive pertinent detail in verbal or tabular material when using reference guides, timetables and tariff books;
- capacity to lift and carry up to fifty pounds is required for 4193-126 CARGO AGENT and 4193-130 RAIL-EXPRESS CLERK when checking and weighing baggage or shipments, sorting parcels and assembling cargo.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- one week to six months of on-the-job training, depending upon the complexity of the occupation;

- for 4193-110 TRAVEL AGENT, on-the-job training and related experience for one year.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be from 4193-114 RESERVATION CLERK and 4193-122 TRAVEL CLERK to 4193-110 TRAVEL AGENT. Some travel agents may advance to 4190-130 SUPERVISOR, TRAVEL CLERKS, if they have supervisory abilities and leadership potential. Travel agents may also enter into business through formation of their own agency, or in partnership with others.

Transfer

Transfer is within the chapter or to some other public contact occupations such as 4194-110 HOTEL CLERK or to some occupations in Chapter 4197 GENERAL OFFICE CLERKS. 4193-126 CARGO AGENT and 4193-130 RAIL-EXPRESS CLERK, may transfer to some occupations in Chapter 4153, SHIPPING AND RECEIVING CLERKS, if they possess the necessary qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people such as giving and obtaining information on travel and transportation.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions such as discussing travel arrangements with clients;
- the evaluation of information against measurable or verifiable criteria such as determining handling requirements for specified amounts of cargo.

OTHER CLUES

A broad cultural background and knowledge of the customs and

geography of other countries would be an asset for those who make travel arrangements.

HOTEL CLERKS**WORK PERFORMED**

This chapter includes occupations in hotels and related establishments concerned with accommodating guests. Worker functions include: compiling information regarding hotel services; and speaking to guests to answer inquiries and to inform them of hotel services, room accommodations and billings. Work activities include: registering guests; renting rooms; checking keys and valuables; receiving and distributing messages and mail; and presenting statements to departing guests for payment.

LIST OF OCCUPATIONAL TITLES**GED SVP****4194-110 HOTEL CLERK** (cater. & lodg.)

3 4

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5		L 456	I	3	4	23	51

APTITUDES AND CAPACITIES

Hotel Clerks require:

- learning ability to understand and apply procedures for accommodating guests in hotels, and to acquire knowledge of available services;
- verbal ability to deal with hotel guests, to clearly answer their inquiries and requests;

- numerical ability to carry out financial transactions with hotel guests;
- clerical perception for details when recording guests' reservations and messages, and to avoid errors when presenting statements to departing guests;
- ability to stand much of the time while reaching for and handling items such as account records, mail, messages and room keys.

TRAINING AND ENTRY REQUIREMENTS

Hotel Clerks normally require:

- ten to twelve years of general education; and
- three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Hotel Clerks may advance to 6130-114 MANAGING SUPERVISOR, HOTEL, MOTEL AND LODGING HOUSE or to 4190-122 SUPERVISOR, HOTEL CLERKS, if they have supervisory potential, leadership qualities and the required experience. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

Transfer may be to some occupations in chapter 4193 TRAVEL CLERKS, TICKET, STATION AND FREIGHT AGENTS and to some occupations in chapter 4171, RECEPTIONISTS AND INFORMATION CLERKS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of Hotel Clerk require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people such as welcoming guests and informing them of hotel services;
- routine, concrete and organized work.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions such as registering guests by telephone, by letter or in person, or directing them to local attractions or addresses.
- a variety of duties often characterized by frequent change.
- performing duties under specific instruction, allowing little or no room for independent action or judgement.

OTHER CLUES AND REQUIREMENTS**Other Clues**

Part-time or summer vacation experience working at a restaurant, hotel, motel or resort may indicate an inclination on the part of the applicant for this type of work.

Other Requirements

- a neat appearance;
- a cordial and helpful attitude;
- courteous manner.

PERSONNEL CLERKS

WORK PERFORMED

This chapter includes occupations concerned with clerical duties relating to personnel administration. Worker functions include: interviewing applicants to obtain information, discuss employment opportunities and company policies and benefits; and compiling and recording information on prospective or current company employees concerning recruitment, training, promotion, attendance, retirement and discharge. Work activities include: screening applicants by phone, letter or in person; referring qualified applicants to hiring officer; writing letters to references indicated on candidate's application; and maintaining personnel files.

LIST OF OCCUPATIONAL TITLES

GED SVP

4195-110 PERSONNEL CLERK (clerical)

4 4

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	4	5	4		S 4567	I	4	4	26	59Y

APTITUDES AND CAPACITIES

- Personnel Clerks require:
 - learning ability to understand and apply company employment and personnel policies and procedures;
- verbal ability to skilfully interview and correspond with applicants;
 - clerical perception to observe pertinent detail and avoid errors when completing employee records and correspondence.

TRAINING AND ENTRY REQUIREMENTS

- Personnel Clerks normally require:
- twelve years of general education;
 - three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced Personnel Clerks may advance to higher levels of responsibility, such as to 1174-134 EMPLOYMENT INTERVIEWER. Those with supervisory ability may advance to 4190-126 SUPERVISOR, PERSONNEL CLERKS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profiles.

Transfer

Transfer may be to other occupations such as 4171-122 INFORMATION CLERK, 4193-122 TRAVEL CLERK, 4197-114 CLERK, GENERAL OFFICE and 4199-166 INVESTIGATOR that require similar skills.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Personnel Clerks require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- dealing with people and communicating ideas such as interviewing applicants for employment.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria such as determining suitability of applicants for employment;
- the evaluation of information against measurable or verifiable criteria such as deciding if individuals' qualifications meet company standards.

GENERAL OFFICE CLERKS

WORK PERFORMED

This chapter includes occupations concerned with performing any combination of clerical duties of a general nature. Worker functions include: compiling and copying information, and computing payments and balancing accounts. Work activities include: typing, filing and recording information such as sales contracts, tax transactions and correspondence; answering telephones; taking orders; arranging appointments; interviewing and referring callers; and ordering supplies.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
4197-110	MANIFEST CLERK	4	5	4197-126	PROPERTY CLERK (gov. serv.)	3	3
	(motor trans.; water trans.)			4197-130	OFFICE CLERK (clerical)	3	3
4197-114	CLERK, GENERAL OFFICE (clerical)	4	4	4197-134	POLICE-STATION CLERK	3	3
4197-118	CONTRACT CLERK, MOTOR	3	5		(gov. serv.)		
	VEHICLE (ret. trade)			4197-138	TAX CLERK (clerical)	3	2

N.B. Occupation 4197-122 WARD CLERK (medical) has been transferred, for Volume II purposes, to Chapter 4199, OTHER CLERICAL AND RELATED OCCUPATIONS, N.E.C.

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>4</u>	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	4	5	4	S-L 4567	I	4-3	5-2	31	20Y	
<u>3</u>	<u>4</u>	<u>4</u>					<u>3</u>			5						2Y	

APTITUDES AND CAPACITIES

General Office Clerks require:

- learning ability to understand and apply office systems and procedures;
- verbal ability to answer telephones, to arrange appointments for clients, interview customers and relay messages, and to direct visitors to appropriate person or location;

- numerical ability to rapidly and accurately compute payments, resolve discrepancies in accounts, and calculate price of merchandise, sales tax, fees, insurance premiums and interest;
- clerical ability to avoid errors when typing and filling in forms;
- ability to co-ordinate eyes and hands rapidly when operating office machines such as typewriter and adding machine;
- finger dexterity to type, file, and manipulate clerical work aids.

TRAINING AND ENTRY REQUIREMENTS

General Office Clerks normally require:

- ten to twelve years of general education;

- up to one academic year of commercial courses in vocational or commercial schools; and
- up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced General Office Clerks with supervisory ability may advance to 4190-118 SUPERVISOR, GENERAL OFFICE CLERKS. See also Chapter 410, CLERICAL SUPERVISORS, for qualifications profile.

Transfer

General Office Clerks may transfer to other occupations that require similar skills in Minor Groups 416, LIBRARY, FILE AND CORRESPONDENCE CLERKS AND RELATED OCCUPATIONS; 417, RECEPTION, INFORMATION, MAIL AND MESSAGE DISTRIBUTION OCCUPATIONS; and 419, OTHER CLERICAL AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this Chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work such as following office procedures;
- dealing with things and objects of a clerical nature such as office equipment, and paperwork.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences such as typing letters and envelopes;
- the precise attainment of set limits and tolerance such as completing official forms according to standard and referring to rate tables and schedules.

OTHER CLERICAL AND RELATED OCCUPATIONS, N.E.C.

This group includes clerical occupations, not elsewhere classified, concerned with dispatching men and equipment, compiling, copying and recording data, and performing other clerical duties.

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Dispatching Occupations</i>																		
4199-110	DISPATCHER, OIL WELL SERVICES (oil & nat. gas)	<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 56	I	3	5	23	25
4199-114	DISPATCHER (gov. serv.)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5	S 456	I	3	4	31	25Y
4199-118	DISPATCHER, RADIO (gov. serv.; water trans.)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5	S 56	I	3	4	23	258
4199-122	FIRE-ALARM OPERATOR (gov. serv.)	<u>3</u>	<u>3</u>	4	4	<u>4</u>	<u>3</u>	4	4	4	5	5	S 456	I	3	4	231	258
4199-126	PROTECTIVE-SIGNAL OPERATOR (bus. serv.)	<u>3</u>	<u>3</u>	4	4	<u>4</u>	<u>3</u>	<u>4</u>	4	3	5	5	L 4567	I	3	4	31	25
4199-130	RADIO-TELEPHONE OPERATOR, HIGHWAYS (gov. serv.)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	<u>3</u>	<u>3</u>	3	5	5	S 456	I	3	4	13	25Y
9535-122T	WATER-SERVICE DISPATCHER (water works)	<u>3</u>	<u>3</u>	4	3	4	<u>3</u>	4	4	4	5	5	S 4567	I	3	4	23	25
<i>Other Clerical Occupations</i>																		
4199-150	COPY CUTTER (print. & pub.)	<u>3</u>	<u>3</u>	4	3	<u>3</u>	<u>2</u>	4	3	4	5	5	L 47	I	4	8	13	0Y2
4199-154	BUS-TRANSPORTATION-SERVICE CO- ORDINATOR (motor trans.)	<u>3</u>	<u>3</u>	<u>3</u>	3	4	<u>3</u>	4	4	4	5	5	L 456	I	4	6	62	4590Y
4199-158	MUNICIPAL OFFICE CLERK (print. & pub.)	<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 456	I	4	6	26	15
4199-162	SUGGESTION-PROGRAM CLERK (clerical)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5	S 56	I	4	6	6	51
4199-164	ENGINEERING CLERK (clerical)	<u>3</u>	<u>3</u>	3	4	3	<u>3</u>	4	4	4	5	5	S 47	I	4	6	71	0Y1
4199-166	INVESTIGATOR (bus. serv.)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5	S 456	I	4	5	26	519
4199-170	TEST CLERK (clerical)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 4	I	4	5	21	50
4199-174	PROOF-READER (clerical)	<u>3</u>	<u>2</u>	4	4	<u>3</u>	<u>1</u>	4	4	4	5	5	S 4567	I	4	5	13	20Y
4199-178	BUS-AND-TAXI-TERMINAL CLERK (motor trans.)	<u>3</u>	4	<u>3</u>	4	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	5	L 4567	I	3	5	31	2Y
4199-182	LICENCE CLERK (gov. serv.)	<u>3</u>	<u>3</u>	4	5	<u>4</u>	<u>4</u>	4	4	4	5	5	S 456	I	3	5	21	25Y
4199-186	ORDER CLERK (clerical)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 456	I	3	5	231	5Y
4199-190	TITLE SEARCHER (insur. & real estate)	<u>3</u>	<u>3</u>	3	5	<u>4</u>	<u>3</u>	4	4	4	5	5	L 47	I	3	5	13	Y2
4199-194	CLASSIFIED-ADVERTISING CLERK (clerical)	<u>3</u>	<u>3</u>	<u>3</u>	4	3	<u>3</u>	4	4	4	5	5	S 4567	I	3	4	213	25
4199-198	CREDIT-AUTHORIZATION CLERK (clerical)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 456	I	3	4	31	23
4199-202	COMPILER (clerical)	<u>3</u>	<u>3</u>	4	5	4	<u>3</u>	4	4	4	5	5	S 47	I	3	4	31	23Y
4199-206	STOWAGE CLERK (water trans.)	<u>3</u>	4	<u>3</u>	3	3	<u>3</u>	4	4	4	5	5	L 4	I	3	4	31	2Y
4199-210	SURVEY NOTE-KEEPER (prof. & tech., n.e.c.)	<u>3</u>	<u>3</u>	<u>3</u>	3	4	<u>3</u>	4	4	4	5	5	S 456	I	3	4	13	23Y
4197-122T	WARD CLERK (medical)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5	L 4567	I	3	3	31	2Y
4199-214	PUBLIC-OPINION COLLECTOR (clerical)	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	5	5	L 456	B	3	3	263	523
4199-218	CLERK, MAINTENANCE SERVICE (clerical)	<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 456	I	3	3	31	23
4199-222	DIET CLERK (clerical)	<u>3</u>	<u>3</u>	<u>3</u>	5	4	<u>2</u>	4	4	4	5	5	S 4	I	3	3	31	23
4199-226	TRACING CLERK (clerical)	<u>3</u>	<u>3</u>	4	5	4	<u>3</u>	4	4	4	5	5	L 56	I	3	3	23	235
4199-230	CHART CHANGER (clerical)	4	4	4	3	<u>3</u>	5	<u>4</u>	<u>3</u>	<u>4</u>	5	5	L 47	B	3	3	31	23Y

GROUP 4199

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
4199-234	METER READER (elec. power; utilities. n.e.c.; water works)	<u>4</u>	4	<u>4</u>	4	<u>4</u>	<u>3</u>	4	4	4	4	5	L 2	B	3	3	31	23Y
4199-238	COPY HOLDER (clerical)	3	<u>3</u>	5	5	<u>4</u>	4	5	5	5	5	5	S 567	I	3	3	3	23
4199-242	BROADCAST CLERK (broadcast., motion pic. & stage)	<u>3</u>	<u>3</u>	4	5	4	<u>3</u>	4	4	4	5	5	S 46	I	3	3	31	2Y
4199-246	TRAFFIC CHECKER (gov. serv.; motor trans.)	<u>3</u>	<u>3</u>	4	5	4	<u>3</u>	4	4	4	5	5	S 456	O	3	2	23	52
4199-250	POLL CLERK (gov. serv.)	<u>4</u>	<u>4</u>	<u>4</u>	5	4	<u>3</u>	4	4	4	5	5	S 56	I	3	2	321	235
4199-254	PARKING-METER COLLECTOR (gov. serv.)	4	4	5	5	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 4	O	2	2	31	23
4199-258	LOST-AND-FOUND CLERK (clerical)	4	<u>4</u>	4	5	<u>4</u>	4	4	4	4	5	4	L 456	I	2	2	31	235
4199-262	COLLECTOR, COIN BOX (clerical)	<u>4</u>	4	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	5	5	M 4	O	2	2	31	23
4199-266	PROCESS SERVER (bus. serv.)	4	<u>4</u>	5	5	4	<u>4</u>	4	4	4	5	5	L 56	B	2	2	23	23

MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS

(Includes supervisory Unit Groups 5130 through 5190)

WORK PERFORMED

This chapter includes occupations concerned with conducting businesses engaged in selling commodities or services, on own or owners' behalf or in partnership; and occupations concerned with supervising workers engaged in selling activities. Worker functions include: planning and organizing operations of establishments on the basis of data obtained from studies of market conditions, sales reports and other factors; and defining or interpreting procedures, assigning specific duties to staff, maintaining harmonious relations, and promoting efficiency within organization. Work activities include: estimating demands for goods or services; planning layouts, displays or sales campaigns; hiring and training workers; preparing sales records and reports; attending seminars or meetings to keep abreast of new market developments or sales techniques; requisitioning merchandise, supplies and equipment; investigating customer complaints; recommending or initiating personnel actions such as promotions, transfers and disciplinary measures; conferring with workers to resolve complaints and grievances; and instituting or suggesting measures to improve work methods, equipment, service or working conditions.

LIST OF OCCUPATIONAL TITLES

Managing Supervisors, Sales Occupations

5130-114	MANAGING SUPERVISOR, RETAIL STORE (ret. trade)
5130-118	MANAGING SUPERVISOR, SERVICE STATION (motor vehicle; ret. trade)
5130-122	MANAGING SUPERVISOR, WHOLESALE ESTABLISHMENT (whole. trade)
5170-110	INVESTMENT BROKER (bank. & finance)
5170-114	MUTUAL-FUND BROKER (bank. & finance)
5170-118	GRAIN BROKER (bank. & finance)
5170-126	MANAGING SUPERVISOR, REAL ESTATE (insur. & real estate)

Supervisors, Sales Occupations

5130-110	DEPARTMENT SUPERVISOR, SUPERMARKET (ret. trade)
5130-126	SUPERVISOR, DOOR-TO-DOOR SALESMEN (ret. trade)
5130-130	SUPERVISOR, NEWSPAPER SALES (print. & pub.)
5170-120	SUPERVISOR, ADVERTISING SALESMEN (bus. serv.)
5170-122	SUPERVISOR, LIFE INSURANCE SALESMEN (insur. & real estate)
5190-110	SUPERVISOR, DRIVER-SALESMEN (any ind.)

QUALIFICATIONS PROFILES

Managing Supervisors

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5		S-L 56	I	5-4	8-6	256	45091
	<u>3</u>	<u>2</u>	3														

Supervisors

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5		S-L 56	I	5-3	7-5	25	45
<u>2</u>	<u>2</u>	<u>2</u>								4							

APTITUDES AND CAPACITIES

Managing Supervisors and Supervisors in this chapter require:

- learning ability to understand and apply management and supervisory principles and practices, and the techniques associated with the type of sales work supervised; and reasoning ability to effectively plan, organize and expedite work activities;
- verbal ability to comprehend sales reports and market information

and to communicate effectively with superiors, subordinates and clients, both orally and in writing;

- numerical ability to compile sales figures in order to prepare reports and determine commissions;
- clerical perception to detect errors in sales reports, contracts, inventory control records and promotional material.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter are usually selected from employees who have demonstrated leadership qualities and initiative in lower level jobs. The normal requirement is ten to sixteen years of general or commercial education; and one to ten years in related subordinate positions or on-the-job training, depending on the position involved. Some employers provide formalized courses in such subjects as business management,

marketing, sales, work simplification or job relationships, or the worker may acquire training on his own initiative through university extension or other courses.

Depending on the nature of the occupation, the worker may be required to possess a licence to sell.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter who demonstrate superior ability and initiative, may advance to higher supervisory, managerial or executive positions, or may become partners or owners of establishments in their field of work. They may advance to occupations such as 1137-118 MANAGER, SALES; 1141-110 MANAGER, MERCHANDISE PURCHASING; and 1149-142 MANAGER, REAL ESTATE. See Major Group 11, MANAGERIAL, ADMINISTRATIVE AND RELATED OCCUPATIONS for additional promotional possibilities.

Transfer

Transfers may occur to similar positions in other departments, branches or establishments or to other occupations requiring similar skills, such as 1171-182 SECURITIES COUNSELLOR, 1171-184 INVESTMENT ANALYST, 1175-110 PURCHASING OFFICER, BUSINESS SERVICES, and 1179-154 SALES-PROMOTION ADMINISTRATOR. See Major Group 11, MANAGERIAL, ADMINISTRATIVE AND RELATED OCCUPATIONS for additional transfer possibilities.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities involving business contact with people;
- work resulting in prestige or the esteem of others.

Additionally, for Managing Supervisors, Sales Occupations and 5170-120 SUPERVISOR, ADVERTISING SALESMEN and 5170-122 SUPERVISOR, LIFE INSURANCE SALESMEN, activities concerned with people and the communication of ideas.

Temperaments

Managing Supervisors, Sales Occupations:

- the responsibility for the direction, control, and planning of entire sales programs;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against measurable or verifiable criteria such as verifying progress of sales programs;
- the evaluation of information against sensory or judgmental criteria, such as analyzing market conditions and estimating prospective sales;
- a variety of duties often characterized by frequent change.

Supervisors, Sales Occupations:

- the responsibility for the direction, control, and planning of the activities of sales personnel;
- dealing with people in actual job duties beyond giving and receiving instructions.

Additionally, for occupations 5170-120 SUPERVISOR, ADVERTISING SALESMEN and 5170-122 SUPERVISOR, LIFE INSURANCE SALESMEN:

- the evaluation of information against sensory or judgmental criteria; and
- a variety of duties often characterized by frequent change.

OTHER REQUIREMENTS

- ability to maintain harmony in working relationships among workers and to motivate them;

- initiative and drive;
- when performing work of subordinates, may be required to have the same qualifications as the workers.

TECHNICAL SALESMEN AND RELATED ADVISERS

WORK PERFORMED

This chapter includes occupations concerned with selling scientific, mechanical, electrical, electronic and chemical commodities, and light, heat, power and associated services. Worker functions include: persuading customers to buy products or services, and explaining their merits; determining time, place and sequence of operations based on an analysis of data related to customers' facilities and requirements; compiling data to recommend products or services; and computing costs of installing new equipment or services. Work activities include: preparing reports to show reduced costs or increased efficiency resulting from proposed changes; providing specialized information about the composition, installation, utilization and maintenance of products or services; and preparing or arranging for the preparation of plans and operating specifications.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
5131-110	SALES ENGINEER, LIGHT, HEAT AND POWER (elec. power; utilities, n.e.c.)	5	8	5131-134	TECHNICAL SALESMAN, INDUSTRIAL MACHINERY AND EQUIPMENT (whole. trade)	5	7
5131-114	TECHNICAL SALESMAN, ELECTRONIC-DATA-PROCESSING (bus. serv.)	5	8	5131-138	TECHNICAL SALESMAN, MEDICAL-DENTAL EQUIPMENT AND SUPPLIES (whole trade)	5	7
5131-118	TECHNICAL SALESMAN, AIRCRAFT (whole. trade)	5	7	5131-142	TECHNICAL SALESMAN, RAILROAD EQUIPMENT AND SUPPLIES (whole. trade)	5	7
5131-122	TECHNICAL SALESMAN, AGRICULTURAL EQUIPMENT AND SUPPLIES (whole. trade)	5	7	5131-146	SALES REPRESENTATIVE, LIGHT, HEAT AND POWER (elec. power; utilities, n.e.c.)	4	6
5131-126	TECHNICAL SALESMAN, CONSTRUCTION EQUIPMENT AND SUPPLIES (whole. trade)	5	7	5131-150	TECHNICAL SALESMAN, CHEMICALS (whole. trade)	4	6
5131-130	TECHNICAL SALESMAN, ELECTRONIC EQUIPMENT (whole. trade)	5	7	5131-154	TECHNICAL SALESMAN, METALS (whole. trade)	4	6

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
2	2	2	4	3	4	4	4	4	5	4	L 56	I	5-4	8-6	762	75901
3		3	3		3					5						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand, interpret and evaluate technical data and to acquire and apply a knowledge of the persuasive techniques of selling;
- verbal ability to understand meanings and uses of technical terminology, and ideas associated with them, and to communicate effectively with people;

- numerical ability to make mathematical computations quickly and accurately for orders and estimates;
- spatial perception to visualize the layout and functioning of equipment in plant installations and to visualize the effects of modifications to equipment or plant facilities;
- clerical perception to see pertinent detail in reference material such as diagrams, charts, catalogues, manuals and specifications.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- a university degree in a technical discipline; or

- completion of secondary school plus several years of technical education at a vocational institution; and

CHAPTER 5131

- a short period of in-plant training followed by several months of on-the-job training; and either

- previous sales experience; or
- extensive sales-oriented training provided by the employer.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter who have potential for supervision can advance to positions related in their field in Volume I, Unit Group 5130 SUPERVISORS: SALES OCCUPATIONS, COMMODITIES. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profiles.

Transfer

Workers in this chapter may transfer to other occupations within this chapter, and also to some related occupations requiring similar skills in Chapter 5133, COMMERCIAL TRAVELLERS or Chapter 5177, BUSINESS SERVICES SALESMEN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- scientific and technical work;
- dealing with people and the communication of ideas;
- business contact with people.

Temperaments

- influencing people in their opinions, attitudes or judgments about ideas or things;
- dealing with people in actual job duties beyond giving and receiving instructions, as in advising clients in such a manner as to create an atmosphere of goodwill toward the firm;
- the evaluation of information against sensory or judgmental criteria, and/or against measurable or verifiable criteria, to arrive at decisions;
- a variety of duties often characterized by frequent change.

OTHER REQUIREMENTS

- self-confidence and ability to manage own activities together with initiative and drive to complete transactions successfully;
- diplomacy and tact in dealing with people;
- good grooming and attire.

COMMERCIAL TRAVELLERS

WORK PERFORMED

This chapter includes occupations concerned with selling commodities on a wholesale basis to wholesale, retail, industrial, professional or other establishments in an allotted geographical area. Worker functions include: persuading customers to buy products; compiling data about products so as to be able to explain their merits; and computing total costs of orders. Work activities include: soliciting orders from established clientele and attempting to secure new accounts; showing samples or catalogue illustrations of products to prospective buyers; quoting prices and credit and discount terms; processing orders to office or warehouse and arranging delivery schedules; resolving customer complaints; and keeping abreast of the latest market conditions, product innovations and price changes.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
5133-110	MANUFACTURERS' AGENT (whole. trade)	4	7	5133-142	SALES REPRESENTATIVE, PETROLEUM PRODUCTS (whole. trade)	4	6
5133-114	PHARMACEUTICAL REPRESENTATIVE (whole. trade)	4	7	5133-146	SALES REPRESENTATIVE, PLASTIC PRODUCTS (whole. trade)	4	6
5133-118	SALES REPRESENTATIVE, TEXTBOOKS (print. & pub.; whole. trade)	4	6	5133-150	SALES REPRESENTATIVE, PULP AND PAPER PRODUCTS (whole. trade)	4	6
5133-122	SALES REPRESENTATIVE, CANVAS PRODUCTS (whole. trade)	4	6	5133-154	SALES REPRESENTATIVE, RUBBER PRODUCTS (whole. trade)	4	6
5133-126	SALES REPRESENTATIVE, COMMERCIAL AND INDUSTRIAL EQUIPMENT AND SUPPLIES (whole. trade)	4	6	5133-158	CONTACT MAN, RECORDINGS (whole. trade)	4	5
5133-130	SALES REPRESENTATIVE, FOOD PRODUCTS (whole. trade)	4	6	5133-162	SALES REPRESENTATIVE, PUBLICATIONS (whole. trade)	4	5
5133-134	SALES REPRESENTATIVE, GARMENTS AND OTHER TEXTILE PRODUCTS (whole. trade)	4	6	5133-166	SALES REPRESENTATIVE, TOBACCO PRODUCTS AND SMOKING SUPPLIES (whole. trade)	4	5
5133-138	SALES REPRESENTATIVE, MOTOR VEHICLES AND EQUIPMENT (whole. trade)	4	6				

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	4	5		L 56	I	4	7-5	26	759
<u>2</u>	<u>2</u>				<u>4</u>					4							

APTITUDES AND CAPACITIES

Commercial Travellers require:

- learning ability to acquire and apply a knowledge of the persuasive techniques of selling, and to understand the functions, qualities, applications and specifications of the products sold;

- verbal ability to communicate effectively when describing products, discussing prices or resolving complaints;
- numerical ability to calculate prices, and credit and discount terms;
- clerical perception to maintain accurate records of transactions.

TRAINING AND ENTRY REQUIREMENTS

Commercial Travellers normally require:

- a minimum of twelve years of general education;
- some product and plant experience followed by extensive on-the-job training for a period of from six months to two years;

- some previous sales experience, although most establishments provide extensive sales-oriented training.

Some occupations require additional training, for example, 5133-114 PHARMACEUTICAL REPRESENTATIVE would normally require post-secondary courses in chemistry and biology.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Commercial Travellers with supervisory abilities and a potential for leadership may advance to appropriate occupations in Volume I, Unit Group 5130, SUPERVISORS: SALES OCCUPATIONS, COMMODITIES. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profiles.

Transfer

Transfer possibilities may be to occupations requiring little or no travelling, usually in wholesale or retail establishments which sell products related to previous sales experience; for example, some occupations in Chapter 5135, SALESMEN AND SALESPERSONS, COMMODITIES, N.E.C. and Chapter 5191, BUYERS, WHOLESALE AND RETAIL TRADE.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- dealing with people and communicating ideas.

Temperaments

- influencing people in their opinions, attitudes or judgments concerning ideas or things;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria.

OTHER REQUIREMENTS

- self-confidence and ability to manage own activities together with initiative and drive to complete transactions successfully;
- diplomacy and tact in dealing with people;
- good grooming and attire;
- the capacity to do extensive travelling may be required.

SALESMEN AND SALESPERSONS, COMMODITIES, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with selling commodities in wholesale and retail trade establishments. Worker functions include: persuading customer to purchase commodities; and compiling data to describe product advantages. Work activities include: talking to customer to ascertain his wants, such as make, type and quality of merchandise; displaying and demonstrating articles and setting up displays in window or on sales floor; advising customer on care and use of merchandise; quoting prices, credit terms, trade-in allowances and delivery date; preparing sales slip or sales contract; receiving payment or arranging credit authorization; maintaining records of transactions and inventory of stock; and requisitioning merchandise from stockroom or warehouse.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
5135-110	SALESMAN, MOTOR VEHICLES (ret. trade)	4	6	5135-154	SALESPERSON, HARDWARE (ret. trade; whole. trade)	4	5
5135-114	SALESMAN, SEWING MACHINES (ret. trade; whole. trade)	4	6	5135-158	SALESPERSON, JEWELLERY AND RELATED PRODUCTS (ret. trade; whole. trade)	4	5
5135-118	SALESMAN, HEARING AIDS (ret. trade)	4	6	5135-162	SALESPERSON, PETS AND PET SUPPLIES (ret. trade; whole. trade)	4	5
5135-120	SALESMAN, LIVESTOCK (whole. trade)	4	6	5135-166	SALESPERSON, PHOTOGRAPHIC EQUIPMENT AND SUPPLIES (ret. trade; whole. trade)	4	5
5135-122	SALESMAN, MUSICAL INSTRUMENTS AND SUPPLIES (ret. trade; whole. trade)	4	6	5135-170	SALESPERSON, SPORTING GOODS (ret. trade; whole. trade)	4	5
5135-126	SALESPERSON, PARTS (ret. trade; whole. trade)	4	6	5135-174	SALESPERSON, SURGICAL APPLIANCES (ret. trade; whole. trade)	4	5
5135-130	SALESMAN, BOATS AND MARINE EQUIPMENT (ret. trade; whole. trade)	4	5	5135-178	SALESPERSON, WEARING APPAREL (ret. trade; whole. trade)	4	5
5135-134	SALESMAN, DRAPERY AND UPHOLSTERY (ret. trade; whole. trade)	4	5	5135-182	SALESPERSON, FOOTWEAR (ret. trade)	3	5
5135-138	SALESMAN, FLOOR COVERINGS (ret. trade; whole. trade)	4	5	5135-186	SALESPERSON, AUTOMOBILE ACCESSORIES (ret. trade; whole. trade)	3	4
5135-142	SALESMAN, FURNITURE AND APPLIANCES (ret. trade; whole. trade)	4	5	5135-190	SALESPERSON, HOUSEWARES (ret. trade)	3	4
5135-146	SALESMAN, HOUSE TRAILERS (ret. trade; whole. trade)	4	5	5135-194	SALESPERSON, YARD GOODS (ret. trade)	3	4
5135-150	SALESPERSON, BOOKS (ret. trade)	4	5				

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	<u>3</u>		L 456	I	4-3	6-4	26	7590
		<u>4</u>	3		<u>4</u>	3		3		<u>4</u>							
										5							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to acquire and apply a knowledge of the persuasive techniques of selling, and to become familiar with products;
- verbal ability to communicate effectively with customers;

- numerical ability to calculate prices of orders;
- clerical perception to prepare sales receipts and inventory records;
- ability to perceive differences in colours, or similarities in shades of same colour, when recommending, for example, contrasting or complementing household furnishings.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- ten to twelve years of general education; and

- from three months to one year of on-the-job training, depending on the product or type of selling involved.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers with supervisory abilities may advance to appropriate occupations in Volume I, Unit Gr 5130, SUPERVISORS: SALES OCCUPATIONS, COMMODITIES. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profiles. Others may advance to occupations such as those in Chapter 5133, COMMERCIAL TRAVELLERS.

Transfer

Transfer may be to other sales occupations within this chapter with only a limited period required for product familiarization.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people, as is experienced in a sales situation;
- dealing with people and communicating ideas.

Temperaments

- influencing people in their opinions, attitudes or judgments concerning ideas or things;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria;
- the evaluation of information against measurable or verifiable criteria.

OTHER REQUIREMENTS

- initiative and drive to complete transactions successfully;
- diplomacy and tact in dealing with people;
- good grooming and attire.

SALES CLERKS, COMMODITIES

WORK PERFORMED

This chapter includes occupations concerned with selling commodities, usually in retail trade establishments, for which a knowledge of the item sold is not a primary requirement. Worker functions include: serving customers in a patient and courteous manner; computing cost of articles purchased by customer; and handling merchandise when stocking shelves and wrapping customers' purchases. Work activities include: pricing articles and stocking shelves with merchandise; obtaining articles for customers from shelf or stock room; directing customers to fitting rooms; writing sales slips for items purchased; receiving payment and making change or preparing charge slips; wrapping and packing customers' purchases; maintaining records of sales and inventory of merchandise; and ordering replacement merchandise from warehouse or stockroom.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
5137-110	COUPON-REDEMPTION CLERK (ret. trade)	2	2	5137-114	SALES CLERK (ret. trade)	2	2

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
3	3	3	4	4	4	4	4	4	5	4	L 456	I	2	2	23	23

APTITUDES AND CAPACITIES

Sales Clerks require:

- learning ability to master simple arithmetic operations, and to absorb, retain, and apply on-the-job training received;
- verbal ability to communicate effectively when expressing ideas and imparting information;

- numerical ability to calculate prices of orders quickly and accurately;
- clerical perception to prepare sales receipts and maintain accurate record of inventory;
- ability to reach for and handle merchandise carefully when stocking shelves and wrapping customers' purchases.

TRAINING AND ENTRY REQUIREMENTS

Sales Clerks normally require:

- eight years or more of general education;
- up to thirty days of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for Sales Clerks who have acquired experience and product knowledge may be to occupations in Chapter 5135, SALES-MEN AND SALESPERSONS, COMMODITIES, N.E.C. Experienced workers with supervisory abilities may advance to appropriate occupations in Volume I, Unit Group 5130, SUPERVISORS: SALES OCCUPATIONS, COMMODITIES. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profiles.

Transfer

Transfer possibilities for Sales Clerks are generally to similar positions with other establishments.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

OTHER REQUIREMENTS

- diplomacy and tact in dealing with people.

STREET VENDORS AND DOOR-TO-DOOR SALESMEN

WORK PERFORMED

This chapter includes occupations concerned with selling a variety of goods or products by soliciting orders from door-to-door or on the street. Worker functions include: persuading customers to buy products; handling goods to demonstrate their merits; compiling data about products so as to be able to explain their qualities; computing costs of orders received; and transcribing details of orders. Work activities include: carrying samples from door-to-door; arranging and displaying products; delivering goods and receiving payment.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
5141-110	DOOR-TO-DOOR SALESMAN (ret. trade)	3	2	5141-114	STREET VENDOR (ret. trade)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
3	<u>3</u>	<u>4</u>	4	4	<u>4</u>	4	4	4	4	4		L-M 456	B	3-2	2	23	572
4	<u>4</u>									5							25

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to acquire and apply a knowledge of the persuasive techniques of selling and to become familiar with the products sold;
- verbal ability to communicate effectively when describing products;

- numerical ability to calculate prices of orders quickly and accurately and to make change;
- clerical perception for 5141-110 DOOR-TO-DOOR SALESMAN, to prepare sales receipts and maintain accurate records of transactions.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- a minimum of eight years of general education;

- a short period of on-the-job training, from a few days to one month. Although not mandatory, some previous sales experience is an asset.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Door-to-Door Salesmen who have potential for supervision may advance to 5130-126 SUPERVISOR, DOOR-TO-DOOR SALESMEN. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profile. There are no clearly defined advancement patterns for Street Vendors.

Transfer

Transfer possibilities for Door-to-Door Salesmen and Street Vendors are limited to similar jobs with different employers, products or services.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people, as is experienced when calling on prospective customers at home or soliciting business from a street location;
- routine, concrete and organized work.

Temperaments

Door-to-Door Salesman

- dealing with people in actual job duties beyond giving and receiving instructions, as in canvassing prospective customers and persuading them to purchase products;
- influencing people in their opinions, attitudes, or judgments concerning ideas or things;
- repetitive or short cycle operations carried out according to set procedures or sequences.

Street Vendor

- repetitive or short cycle operations carried out according to set procedures or sequences;
- dealing with people in actual job duties beyond giving and receiving instructions as in persuading people to buy products.

OTHER REQUIREMENTS

- diplomacy and tact in dealing with people;
- initiative and drive to complete transactions successfully;
- self-confidence and ability to manage own activities;
- good grooming and attire.

NEWSBOYS

WORK PERFORMED

This chapter includes occupations concerned with delivering newspapers to regular subscribers and collecting subscription payments, or selling newspapers on streets or from newspaper stands. Worker functions include: persuading customers to purchase daily newspaper or subscription to newspaper; and handling newspapers for distribution. Work activities include: collecting newspapers from circulation department or drop point; delivering newspapers to subscribers; receiving payment, making change and issuing receipts; and maintaining records of deliveries, sales and payments.

LIST OF OCCUPATIONAL TITLES

GED SVP				GED SVP			
5143-110	NEWSPAPER CARRIER (ret. trade)	1	2	5143-114	NEWSVENDOR (ret. trade)	1	1

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	<u>4</u>	4	4	4	4	<u>4</u>	<u>4</u>	<u>4</u>	5		L-M 456	O	1	2-1	321	23

APTITUDES AND CAPACITIES

Newsboys require:

- learning ability to understand and carry out uncomplicated tasks, such as arranging sequence of newspaper delivery to accomplish duties quickly and efficiently;
- numerical ability to make change quickly and accurately and to account for receipt and delivery of newspapers;
- finger dexterity when making change or sorting newspapers;

- manual dexterity and ability to extend hands and arms in any direction when sorting, folding and distributing newspapers;
- eye-hand-foot co-ordination to deliver newspapers to households while riding bicycle or to dodge traffic when making individual sales to customers in automobiles;
- sufficient strength to perform light to medium work requiring occasional lifting of bundles of newspapers weighing up to fifty pounds;
- capacity to work outside in all climatic conditions.

TRAINING AND ENTRY REQUIREMENTS

Newsboys require minimum educational attainment, and a short demonstration is sufficient for average job performance.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Newsboys may advance to occupations in Chapter 5141, STREET VENDORS AND DOOR-TO-DOOR SALESMEN and, with some additional training, to 4169-126 CIRCULATION CLERK, NEWSPAPER.

Transfer

There is no transfer pattern for these occupations.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- business contact with people;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment.

SERVICE STATION ATTENDANTS

WORK PERFORMED

This chapter includes occupations concerned with selling fuel, lubricants and miscellaneous automotive products to motorists and performing routine service work such as cleaning, lubricating, and making minor repairs to motor vehicles. Worker functions include: serving customers; and handling materials, equipment, and supplies when servicing and making minor repairs to vehicles. Work activities include: filling vehicle's fuel tank and checking such things as oil levels, tire pressures and fluid levels; lubricating vehicles; replacing items such as engine belts, thermostats and spark plugs; selling automotive supplies such as batteries and tires; and collecting payment for services and supplies or completing credit card sales slip.

LIST OF OCCUPATIONAL TITLES

		GED	SVP
5145-110	SERVICE-STATION ATTENDANT (motor vehicle; ret. trade)	2	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4		M 3456	B 7	2	3	123	23Y

APTITUDES AND CAPACITIES

Service-Station Attendants require:

- learning ability to understand and apply simple motor-vehicle servicing instructions;
- numerical ability to make change quickly and accurately, is especially important for those who frequently operate cash registers;
- form perception to detect wear and observe faults in tires, belts and hoses during routine servicing work;

- eye-hand-finger co-ordination to handle tools and equipment, and use cash register or credit card imprinter;
- manual dexterity to lubricate and make adjustments to automobiles;
- agility to work under vehicles and in awkward positions involving stooping, kneeling, crouching, and reaching for servicing equipment;
- capacity to work inside with exposure to fumes, odours, dirt and grease, and outside with exposure to a wide range of climatic conditions.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;
- a one to two-year apprenticeship program in some provinces, or an equivalent of on-the-job training in other provinces;
- compulsory certification in some provinces.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for Service-Station Attendants is to other sales-oriented jobs in the automotive industry, such as those occupations in Chapter 5135, SALESMEN AND SALESPERSONS, COMMODITIES, N.E.C., which are concerned with selling motor vehicles, parts and accessories. Workers who have a potential for supervision may advance to supervisory or managerial positions, such as 5130-118 MANAGING SUPERVISOR, SERVICE STATION. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profile.

Transfer

Transfer is to other occupations involving service and care of motor vehicles, for example, 9179-162 CAR-RENTAL SERVICEMAN, or 9173-114 CHAUFFEUR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- business contact with people;
- routine, concrete, and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little room for independent action or judgment;
- the precise attainment of set limits, tolerances, or standards.

GROUP 5149**SALES OCCUPATIONS, COMMODITIES, N.E.C.**

This group includes occupations, not elsewhere classified, concerned with selling commodities by auction, or selling such items as refreshments and programs at places of entertainment.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																	
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.		
		G	V	N	S	P	Q	K	F	M	E							C	
5149-110	AUCTIONEER (ret. trade; whole. trade)	3	<u>3</u>	<u>3</u>	5	<u>3</u>	4	4	4	4	5	4	L 567	I	3	6	21	5790	
5149-114	VENDOR (ret. trade)	4	<u>4</u>	<u>3</u>	4	4	4	4	4	4	4	<u>4</u>	5	M 456	B	2	2	123	235
5149-118	TOBACCO-AUCTION-ROOM ATTENDANT (whole. trade)	4	<u>4</u>	<u>4</u>	5	4	<u>4</u>	4	4	4	5	5	S 45	I	2	1	231	235	

INSURANCE SALESMEN AND AGENTS

WORK PERFORMED

This chapter includes occupations concerned with selling life, fire, accident, marine, automobile, and other types of insurance. Worker functions include: analyzing clients' insurance requirements and existing arrangements to establish the need for coverage; and persuading clients to purchase insurance. Work activities include: soliciting prospective clients for new business; explaining group and individual insurance plans and various types of insurance coverage to prospective clients; reviewing existing insurance coverage, ascertaining clients' needs, and suggesting changes in or additions to coverage; completing application forms and arranging for medical examinations and other policy requirements; calculating rates or premiums; and establishing method of premium payment.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
5171-110	GROUP-INSURANCE REPRESENTATIVE (insur. & real estate)	5	7	5171-114	SALESMAN, LIFE INSURANCE (insur. & real estate)	4	7
				5171-118	SALESMAN, INSURANCE (insur. & real estate)	4	6

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S-L	56	I	5-4	7-6	26	759
<u>2</u>	<u>2</u>	<u>2</u>															

APTITUDES AND CAPACITIES

Insurance Salesmen and Agents require:

- learning ability to understand insurance programs and to acquire and apply a knowledge of the persuasive techniques of selling;
- verbal ability to communicate effectively concerning insurance policies when promoting sale of insurance to prospective clients;

- numerical ability to evaluate clients' insurance requirements, determine rates of premiums and interpret statistical data in tables and manuals;
- clerical perception to observe detail in insurance proposals and tables and to complete application forms and prepare policies without errors.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- high school graduation, preferably with emphasis on commercial subjects and mathematics;

- a period of from one to four years of on-the-job training, usually supplemented by company sponsored courses;
- completion of provincial licensing requirements.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Insurance salesmen and agents who have potential for supervision may advance to 5170-122 SUPERVISOR, LIFE INSURANCE SALESMEN. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profile. Those who are enterprising may operate their own independent business as agent for a number of insurance companies.

Transfer

Transfer possibilities are limited and are usually to other companies within the industry.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people, as in meeting with clients to discuss insurance plans;
- dealing with people and communicating ideas.

Temperaments

- influencing people in their opinions, attitudes, or judgment concerning ideas or things, as in persuading clients to purchase insurance plans;
- dealing with people in actual job duties, beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria.

OTHER REQUIREMENTS

- self-confidence and ability to manage own activities together with initiative and drive to complete transactions successfully;
- diplomacy and tact in dealing with people;
- good grooming and attire.

REAL ESTATE SALESMEN

WORK PERFORMED

This chapter includes occupations concerned with selling and renting houses, apartments, building lots and other real property, normally on a commission basis. Worker functions include: persuading property owners to list their holdings and clients to purchase property; negotiating the terms of transactions between property owners and purchasers; analyzing data to appraise property; and compiling information on property offered for sale. Work activities include: advertising property for sale or rent; searching public records of sales, leases, assessments, easements and other transactions to determine ownership and property rights; and preparing sales contracts and processing documents to finalize sale.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP
5172-110	APPRAISER, REAL ESTATE (insur. & real estate)	5	8

B

		GED	SVP			GED	SVP
5172-112	RIGHT-OF-WAY AGENT (insur. & real estate)	4	6	5172-118	SALESMAN, REAL ESTATE (insur. & real estate)	4	6
5172-114	SALESMAN, NEW HOMES (insur. & real estate)	4	6	5172-122	LEASEMAN, SIGNS AND DISPLAYS (insur. & real estate)	4	5

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	<u>2</u>	3	3	3	4	4	4	5	5	S 56	B	5	8	2	09
B	<u>3</u>	<u>3</u>	<u>3</u>	4	4	3	4	4	4	5	4	L 56	B	4	6-5	26	759
			<u>4</u>	3							5						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply real estate practices and selling techniques;

- verbal ability to communicate effectively with clients when discussing property features;
- numerical ability to calculate data quickly and accurately when appraising property or writing-up offers-to-purchase.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- A
- a minimum of twelve years of general education;
 - several years experience as a real estate salesman;

- successful completion of a two to four-year program of studies while employed and licensing by the appropriate province and territory.

B

- twelve years of general education;
- on-the-job training, usually for a period of one year;
- licensing by municipal or provincial authorities.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter, who have supervisory potential, may advance to supervisory or managerial positions such as 5170-126 MANAGING SUPERVISOR, REAL ESTATE. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profile.

Transfer

Opportunities for transfer are normally limited to appropriate occupations within the same field of work. Transfer between occupations in Cluster B is normal because of the similarities in skills required.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interest

- business contact with people.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria.

B

Interests

- business contact with people;
- dealing with people and communicating ideas.

Temperaments

- influencing people in their opinions, attitudes or judgments concerning ideas or things;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria.

OTHER REQUIREMENTS

- self-confidence and ability to manage own activities together with initiative and drive to complete transactions successfully;
- diplomacy and tact in dealing with people;
- good grooming and deportment.

SALESMEN AND TRADERS, SECURITIES

WORK PERFORMED

This chapter includes occupations concerned with buying and selling securities such as stocks, bonds, and mutual funds, and selling trust company services. Worker functions include: co-ordinating the buying and selling of securities to maintain a balanced portfolio for client; analyzing market conditions to establish the buying and selling price of particular security or commodity; negotiating with other traders for the purchase and resale of securities to maintain firm's inventory; persuading clients to purchase recommended securities, commodities or services; and speaking to other traders to establish buying and selling price of securities. Work activities include: advising clients concerning history and prospects of organization in which investment is contemplated; furnishing clients with information regarding securities, commodities, services, and market conditions; and developing suitable investment portfolios or trust accounts for presentation to clients.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
5173-110	SECURITIES TRADER (bank. & finance)	5	7	5173-118	SALESMAN, TRUST SERVICES (bank. & finance)	4	7
5173-114	MUTUAL-FUND SALESMAN (bank. & finance)	5	7	5173-122	BROKER'S FLOOR REPRESENTATIVE (bank. & finance)	4	7
				5173-126	GRAIN TRADER (bank. & finance)	4	6

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>2</u>	4	4	<u>3</u>	4	4	4	5	5	S-L	56	I	5-4	7-6	26	759
<u>3</u>	<u>3</u>	<u>3</u>															

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the practices and functioning of the stock market, and to acquire and apply a knowledge of the persuasive techniques of selling;
- verbal ability to communicate effectively with clients, brokers and traders;
- numerical ability to make calculations quickly and accurately when

establishing trading prices, considering market conditions and calculating cost involved in developing investment portfolios;

- clerical perception to prepare and analyze reports and charts of market conditions, market quotations and to avoid errors in calculations.

For 5173-122 BROKER'S FLOOR REPRESENTATIVE, the ability to work effectively while surrounded by constant noise in the stock exchange floor area.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- a minimum of twelve years of general education;
- two or more years of progressive experience and on-the-job training; and
- completion of provincial licensing requirements.

- for 5173-110 SECURITIES TRADER, a university degree in Business Administration or Economics, or the equivalent in part-time studies; and
- from two to four years of progressive experience and training in a securities trading organization.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter who have potential for supervision may advance to appropriate occupations in Volume I, Unit Group 5170, SUPERVISORS: SALES OCCUPATIONS, SERVICES. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profiles.

Transfer

The specialized nature of the work performed usually limits transfers to similar occupations within the same industry.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people, as in negotiating with other traders and brokers, and in discussing investment opportunities with clients;
- dealing with people, and communicating ideas regarding investment opportunities.

Temperaments

- influencing people in their opinions, attitudes or judgments about ideas or things, as in advising clients regarding their investment portfolios;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria to arrive at decisions regarding suitable investments.

ADVERTISING SALESMEN

WORK PERFORMED

This chapter includes occupations concerned with selling artwork to advertising agencies or industrial organizations, selling display or classified advertising space, and selling advertising time on radio or television programs. Worker functions include: analyzing customers' needs to determine most beneficial advertising presentation; compiling data on effectiveness of advertising in particular media; and persuading customers to purchase advertising space or time. Work activities include: calling on prospective customers to solicit business; suggesting ideas for signs and displays; preparing advertising layouts to meet customers' needs; explaining advantages of advertising in publication or on radio or television programs; discussing prices and terms; and preparing sales contracts.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
5174-110	SALESMAN, ART (bus. serv.)	4	7	5174-118	SALESMAN, ADVERTISING (bus. serv.)	4	6
5174-114	SALESMAN, SIGNS AND DISPLAYS (bus. serv.)	4	6	5174-122	SALESMAN, RADIO OR TELEVISION TIME (bus. serv.)	4	6

QUALIFICATIONS PROFILE

Aptitudes													PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C								
<u>2</u>	<u>2</u>	<u>3</u>	3	3	<u>4</u>	4	4	4	5	3			S-L 567	I	4	7-6	26	759
			5	4						4								
										5								

APTITUDES AND CAPACITIES

Advertising Salesmen require:

- learning ability to understand, interpret and transfer the customers' needs and requests into a suitable advertising format, and to acquire a knowledge of the persuasive techniques of selling;
- verbal ability to present advertising ideas effectively and convincingly;

- numerical ability to compute job costs, prepare estimates and determine advertising effectiveness;
- clerical perception to draw up contracts, and to write copy and headings;
- depth perception and colour vision when composing sample advertising layouts and illustrations.

TRAINING AND ENTRY REQUIREMENTS

Advertising Salesmen normally require:

- a minimum of twelve years of general education;

- on-the-job training for a period of at least one year; and
- several years related experience either in commercial artwork or sales-oriented positions.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advertising Salesmen with supervisory abilities may advance to appropriate occupations in Volume I, Unit Group 5170, SUPERVISORS: SALES OCCUPATIONS, SERVICES. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profiles.

Transfer

Transfer is normally limited to occupations within this chapter, but is also possible to other sales-oriented occupations in Chapter 5177, BUSINESS SERVICES SALESMEN, where selling is the primary requisite.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- dealing with people and communicating ideas regarding the layout or presentation of an advertising display.

Temperaments

- influencing people in their opinions, attitudes, or judgments concerning ideas or things, as in persuading customers to purchase advertising;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria, when determining the client's particular needs for advertising.

OTHER REQUIREMENTS

- self-confidence and ability to manage own activities;
- initiative and drive to complete transactions successfully;
- diplomacy and tact in dealing with people;
- good grooming and attire.

BUSINESS SERVICES SALESMEN**WORK PERFORMED**

This chapter includes occupations concerned with selling various services such as credit reporting and debt collection, printing, security, freight and telecommunications to industrial, commercial, institutional, professional and other enterprises. Worker functions include: analyzing customers' requirements to establish need for particular services; compiling data to substantiate analyses of customers' needs; persuading customers to purchase; and co-ordinating customers' existing operations with new services provided. Work activities include: contacting prospective customers to arrange appointments; interviewing customers; explaining use and benefits of improved or additional service; providing technical advice and assistance; quoting prices; and preparing sales contracts and related documents.

LIST OF OCCUPATIONAL TITLES**A****GED SVP**

5177-110 SALES ENGINEER, OIL-WELL SERVICES (oil & nat. gas)

5 8

B**GED SVP****GED SVP**

5177-114 SALES REPRESENTATIVE, HOTEL SERVICES (cater. & lodg.)

4 7

5177-130 SALESMAN, FINANCIAL SERVICES (bus. serv.)

4 6

5177-118 SALES REPRESENTATIVE, TELECOMMUNICATIONS (telecom.)

4 6

5177-134 SALESMAN, PRINTING (print. & pub.)

4 6

5177-122 SALESMAN, FREIGHT SERVICE (motor trans.; rail trans.; storage, n.e.c.)

4 6

5177-138 SALESMAN, MACHINE-VENDING SERVICE (whole. trade)

4 5

5177-126 MEMBERSHIP PROMOTION OFFICER (misc. serv.)

4 6

5177-142 SALESMAN, ARMoured-CAR SERVICE (bus. serv.)

3 3

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	<u>3</u>	<u>3</u>	3	4	4	4	4	5	5	L 56	I	5	8	269	7590
B	<u>3</u>	<u>3</u>	<u>3</u>	4	4	3	4	4	4	5	5	L 56	I	4-3	7-3	26	7590
			<u>4</u>	3	3	4											759

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand, interpret and evaluate technical data, to acquire a knowledge of engineering techniques, and to acquire and apply a knowledge of the persuasive techniques of selling;
- verbal ability to communicate effectively when explaining service offered, providing technical advice, and conferring with engineering and production personnel;

- numerical ability to compile data on customers' service requirements and to calculate rates or service charges.

Additionally, for A:

- spatial perception to visualize and analyze physical problems connected with oil-well drilling.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- graduation from a university faculty of engineering;
- up to four years of experience as field engineer for an oil-well or drilling company;
- six months of on-the-job training.

B

- ten to twelve years of general education;
- one to two years of on-the-job training depending on the complexity of the product or service sold; or
- several years of progressive related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for workers in this chapter is through senior sales positions to supervisory or managerial positions, such as appropriate occupations in Volume I, Unit Group 5170, SUPERVISORS: SALES OCCUPATIONS, SERVICES. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profiles.

Transfer

Transfer for workers in this chapter is possible to other sales-oriented occupations where selling is the primary requisite, for examples see Chapter 5131, TECHNICAL SALESMEN AND RELATED ADVISERS, Chapter 5133, COMMERCIAL TRAVELLERS and Chapter 5174, ADVERTISING SALESMEN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- dealing with people and communicating ideas.

Additionally, for 5177-110 SALES ENGINEER, OIL-WELL SERVICES a preference for activities that are carried on in relation to processes, machines and techniques.

Temperaments

- influencing people in their opinions, attitudes, or judgments concerning ideas or things, as in persuading customers to purchase services;
- dealing with people in actual job duties beyond giving and receiving instructions, as in advising customers in such a manner as to create an atmosphere of goodwill toward the firm;
- the evaluation of information against sensory or judgmental criteria, such as analyzing customers' requirements, to arrive at decisions;
- the evaluation of information against measurable or verifiable criteria when compiling data to substantiate analyses of customers' needs.

SALES OCCUPATIONS: SERVICES, N.E.C.

This group includes occupations, not elsewhere classified, concerned with selling services, such as dance instruction and television cable service.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
5179-110	SALESMAN, EDUCATION COURSES (educ.)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	4	4	4	4	5	5	L 56	I	4	5	26	579
5179-114	SALESMAN, DANCING INSTRUCTIONS (educ.)	3	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	4	4	<u>3</u>	5	L 56	I	3	5	26	579
5179-118	SERVICE REPRESENTATIVE, BUSINESS OFFICE (telecom.)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	4	S 456	I	3	5	26	579
5179-122	SALESMAN, TELEVISION-CABLE SERVICE (telecom.)	4	<u>4</u>	4	4	4	<u>4</u>	4	4	4	5	5	L 56	I	3	4	26	57
5179-126	COUNTER CLERK (ret. trade)	<u>4</u>	<u>4</u>	<u>4</u>	4	4	<u>4</u>	4	4	4	5	5	L 56	I	2	3	32	25

BUYERS, WHOLESALE AND RETAIL TRADE

WORK PERFORMED

This chapter includes occupations concerned with buying commodities for resale in wholesale and retail trade. Worker functions include: reviewing market requirements and co-ordinating the buying of merchandise for establishment; compiling information from trade periodicals, sales promotion literature, and other sources; persuading suppliers to sell merchandise at lowest possible price; and negotiating credit terms, discounts and delivery arrangements with suppliers. Work activities include: determining quantity and type of goods to be purchased; visiting showrooms, factories and markets, and interviewing salesmen, manufacturers and other suppliers to establish and maintain contacts, become familiar with market conditions, and keep abreast of price fluctuations; appraising goods to determine value; and inspecting goods on receipt to authorize payment or return of unsatisfactory merchandise.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
5191-110	BUYER (ret. trade; whole. trade)	5	7	5191-114	BUYER, ASSISTANT (ret. trade)	4	5
				5191-118	BUYER, SALVAGE (whole. trade)	3	5

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>2</u>	4	3	3	4	4	4	5	4		L 4567	I	5-3	7-5	251	5790
<u>3</u>	<u>3</u>	<u>3</u>							<u>4</u>							12	

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to become familiar with establishment's merchandise or commodities, understand their underlying principles or properties, and to acquire and apply a knowledge of the techniques of buying;
- verbal ability to communicate effectively when negotiating prices and terms for purchase of goods;
- numerical ability to deal quickly and accurately with figures when

keeping records of transactions and calculating costs of commodities;

- near visual acuity and colour vision to enable close examination of commodities when appraising goods to establish their value.

Additionally for 5191-118 BUYER, SALVAGE eye-hand-foot co-ordination to drive a car or truck, and the physical capacity to perform heavy work, requiring occasional lifting of scrap material weighing up to one hundred pounds.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- ten to twelve years of general education;
- on-the-job training, varying from six months to two years, depending on the occupation;
- experience in other jobs for a minimum of three months, with some occupations requiring several years of progressive related experience.

5191-110 BUYER may require a university degree in a particular discipline depending on his specialization, or successful completion of secondary school education together with a demonstrated capacity for work in the buying or related field.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers who have a potential for supervision may advance to supervisory or managerial occupations in Volume I, Unit Group 5130, SUPERVISORS: SALES OCCUPATIONS, COMMODITIES. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profiles. Advancement is also possible from an assistant buyer to buyer, when sufficient knowledge of commodity and experience in buying is obtained.

Transfer

Transfer is normally limited to commodity-sales oriented occupations, examples of which are found in Chapter 5135, SALESMEN AND SALESPERSONS, COMMODITIES, N.E.C., and Chapter 5137, SALES CLERKS, COMMODITIES.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- dealing with things and objects, as in inspecting and appraising commodities.

Additionally, for 5191-110 BUYER:

- activities resulting in prestige or the esteem of others.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions, as in interviewing suppliers in a manner to create an atmosphere of goodwill;
- influencing people in their opinions, attitudes, or judgments concerning ideas or things, as in persuading suppliers to sell commodities at lowest possible price;
- the evaluation of information against sensory or judgmental criteria, and measurable or verifiable criteria.

OTHER REQUIREMENTS

- initiative and drive to complete transactions successfully;
- diplomacy and tact in dealing with people;
- good grooming and attire.

DRIVER-SALESMEN

WORK PERFORMED

This chapter includes occupations concerned with driving trucks or other vehicles over an established route to sell goods or services. Worker functions include: driving vehicle on an established route; serving customers in a patient and courteous manner; persuading customers to purchase goods or services; computing costs of goods or services; compiling data when writing-up orders; and handling merchandise. Work activities include: loading vehicle with merchandise; delivering and selling goods such as dairy and bakery products, and food and beverages; collecting and delivering items such as laundry and dry-cleaned garments; collecting coins from amusement and vending machines; refilling vending machines with merchandise; collecting payment for deliveries and sales; and making adjustments and minor repairs to amusement and vending machines.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
5193-110	AMUSEMENT-MACHINE ROUTEMAN (amuse. & rec.)	3	4	5193-118	DRIVER-SALESMAN (any ind.)	3	2
5193-114	VENDING-MACHINE ROUTEMAN (bus. serv.)	3	3	5193-122	MOBILE-CANTEEN DRIVER (ret. trade)	3	2

B

		GED	SVP
5193-126	DRIVER-SALESMAN HELPER (any ind.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	4	<u>3</u>	3	4	4	<u>3</u>	4	M-H 34567	B	3	4-2	123	57 50	
B	4	4	<u>4</u>	4	4	<u>4</u>	4	4	3	5	5	M 34	B	2	2	13	23	

APTITUDES AND CAPACITIES

Driver-Salesmen require:

- learning ability to understand and become familiar with their particular goods and services, and to acquire and apply a knowledge of the persuasive techniques of selling;
- numerical ability to calculate prices of orders quickly and accurately;
- clerical perception to discern pertinent detail in sales receipts and records of transactions;
- capacity to perform medium to heavy work requiring frequent lifting

and carrying of merchandise weighing up to fifty pounds and occasional lifting of articles weighing up to one hundred pounds;

- ability to stoop, kneel or crouch, and reach for and handle merchandise and equipment when loading vehicle or making adjustments to machines.

Workers in Cluster A also require:

- verbal ability to communicate effectively when selling products to customers and soliciting new business;
- eye-hand-foot co-ordination and spatial perception to drive vehicle.

TRAINING AND ENTRY REQUIREMENTS

Workers in Cluster A normally require:

- eight to ten years of general education;
- on-the-job training for a period of from one to three months;
- previous experience either in a sales occupation or service work.

Driver-Salesman Helpers normally require:

- eight years of general education;
- up to one month of on-the-job training.

Workers in this chapter normally will be required to possess a valid

chauffeur's licence and also may be required to purchase a vending licence, depending on local regulations.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be from Driver-Salesman Helper to some occupations in Cluster A. Workers in Cluster A who have potential for supervision may advance to supervisory or managerial positions, such as 5190-110 SUPERVISOR, DRIVER-SALESMEN. See also Chapter 510, MANAGING SUPERVISORS AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profile.

Transfer

Opportunities for transfer are normally limited to similar occupations within this chapter, although workers from Cluster A may transfer to various occupations in Minor Group 917, MOTOR TRANSPORT OPERATING OCCUPATIONS, where driving a vehicle is the primary work performed.

CLUES FOR RELATING APPLICANTS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects;
- business contact with people;
- activities of a routine, concrete and organized nature.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions, as in dealing with customers in such a manner as to create an atmosphere of goodwill toward the firm;
- influencing people in their opinions, attitudes, or judgments concerning ideas or things, as in persuading customers to purchase merchandise.

B

Interests

- dealing with things and objects, as in loading vehicles with merchandise;
- activities of a routine, concrete and organized nature.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

GROUP 5199

OTHER SALES OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities such as selling, renting and demonstrating goods and services, and with appraising commodities.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
5199-110	APPRAISER (bus. serv.)	<u>2</u>	<u>3</u>	<u>2</u>	3	4	3	4	4	4	5	5	L 4	B	5	7	21	90
5199-114	PAWNBROKER (ret. trade)	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>2</u>	4	4	4	4	5	3	L 4567	I	4	6	21	590
5199-118	APPRAISER, AUTOMOBILE (ret. trade)	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	4	4	4	4	5	4	L 567	B	4	6	12	905
5199-122	FILM-RENTAL CLERK (ret. trade)	<u>3</u>	<u>3</u>	<u>3</u>	4	3	3	4	4	4	5	4	S 5	I	4	4	21	579
5199-126	MODEL (ret. trade; whole. trade)	3	3	5	<u>3</u>	4	5	4	4	4	<u>3</u>	3	L 456	I	3	5	635	5
5199-130	LINEN-RENTAL-CONTROL MAN (laund., clean. & press.)	<u>3</u>	<u>3</u>	<u>3</u>	5	4	<u>3</u>	4	4	4	5	5	L 456	I	3	4	2	50Y
5199-134	SALES CLOSER (any ind.)	<u>4</u>	<u>3</u>	<u>4</u>	4	4	<u>4</u>	4	4	4	5	5	L 56	I	3	3	261	579
5199-138	COMPARISON SHOPPER (ret. trade)	<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	4	5	4	L 7	I	3	3	31	20
5199-142	PERSONAL SHOPPER (ret. trade)	3	<u>3</u>	<u>4</u>	4	4	<u>3</u>	4	4	4	5	<u>3</u>	L 456	I	3	3	23	52
5199-146	TOOL-AND-EQUIPMENT-RENTAL CLERK (misc. serv.)	3	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	<u>3</u>	5	5	M 456	I	3	3	123	25
5199-150	CAR-RENTAL CLERK (motor trans.)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 56	I	3	3	23	25
5199-154	DEMONSTRATOR (ret. trade; whole. trade)	3	<u>3</u>	<u>4</u>	4	4	<u>4</u>	4	4	<u>4</u>	5	5	L 456	I	3	3	2613	579
5199-156	WELCOME HOSTESS (bus. serv.)	<u>3</u>	<u>3</u>	4	5	4	4	4	4	4	5	5	S 56	I	3	2	264	57
5199-158	TELEPHONE SOLICITOR (any ind.)	<u>4</u>	<u>3</u>	4	5	4	<u>4</u>	4	4	4	5	5	S 456	I	2	2	263	275
5199-162	RENTAL-SHOP ATTENDANT, RECREATIONAL EQUIPMENT (ret. trade)	<u>4</u>	<u>4</u>	<u>4</u>	4	4	<u>4</u>	4	4	<u>3</u>	5	5	L 456	B	2	2	23	25

MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS

(Includes supervisory Unit Groups 6120 through 6190)

WORK PERFORMED

This chapter includes occupations concerned with operating establishments on own or owner's behalf and with supervising workers engaged in providing services; such as, serving food and beverages; supplying accommodation in hotels, office buildings and similar establishments; laundering, dry cleaning and pressing clothes; and cleaning buildings, equipment, vehicles and aircraft. Worker functions include: planning and organizing operations of establishment based on study of customer requirements and market conditions; and defining or interpreting procedures, assigning specific duties to workers, maintaining harmonious relations, and promoting efficiency within organization. Work activities include: promoting the use of establishment's services; estimating customer demands and requisitioning supplies or equipment; hiring and training workers; establishing standards and quality of services; handling, or supervising the handling of money; preparing accounts or production reports; receiving and acting on customer complaints; initiating personnel actions such as promotions and discharges; and conferring with workers to resolve grievances and other employee problems.

LIST OF OCCUPATIONAL TITLES

<i>Managing Supervisors, Service Occupations</i>		<i>Supervisors, Service Occupations</i>	
6120-110	MANAGING SUPERVISOR, DINING ESTABLISHMENT (cater. & lodg.)	6120-118	SUPERVISOR, BARTENDERS (cater. & lodg.)
6120-114	MANAGING SUPERVISOR, FOOD CONCESSION (cater. & lodg.)	6120-122	SUPERVISOR, CHEFS AND COOKS (cater. & lodg.)
6130-110	MANAGING SUPERVISOR, BUILDING (cater. & lodg.; insur. & real estate)	6120-126	SUPERVISOR, WAITERS, HOSTESSES AND STEWARDS, FOOD AND BEVERAGE (cater. & lodg.)
6130-114	MANAGING SUPERVISOR, HOTEL, MOTEL AND LODGING HOUSE (cater. & lodg.)	6130-118	SUPERVISOR, BAGGAGE PORTERS AND BELLMEN (cater. & lodg.; rail trans.)
6160-110	MANAGING SUPERVISOR, LAUNDERING, DRY-CLEANING ESTABLISHMENT (laund., clean. & press)	6130-122	BUILDING SUPERINTENDENT (cater. & lodg.; insur. & real estate)
6190-112	MANAGING SUPERVISOR, RECREATION ESTABLISHMENTS (amuse. & rec.; educ.)	6130-126	EXECUTIVE HOUSEKEEPER (cater. & lodg.)
		6130-130	SLEEPING-CAR CONDUCTOR (rail trans.)
		6160-114	FOREMAN, LAUNDERING, DRY- CLEANING AND PRESSING OCCUPATIONS (laund., clean. & press)
		6190-110	FOREMAN, JANITORS, CHARWORKERS AND CLEANERS (any ind.)

QUALIFICATIONS PROFILES

Managing Supervisors

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S-L 56	I-B	5-3	7-6	25	4591
<u>2</u>	<u>2</u>	<u>4</u>														

Supervisors

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	<u>3</u>	4	4	4	<u>4</u>	4	4	4	5	5	L 456	I-B	4-3	8-5	25	45
										4						

APTITUDES AND CAPACITIES

Managing Supervisors and Supervisors in this chapter require:

- learning ability to acquire a sound knowledge of the service industry concerned and to understand and apply appropriate supervisory principles and techniques; and reasoning ability to effectively plan, organize and expedite work activities;
- verbal ability to comprehend reports and to effectively communicate with superiors and subordinates;

- clerical perception to detect errors in correspondence, price lists, inventory records and other written or tabular material.

Additionally, Managing Supervisors in this chapter require:

- numerical ability to prepare budget estimates, compute quantities and costs of supplies, and total cash receipts.

TRAINING AND ENTRY REQUIREMENTS

Managing Supervisors in this chapter normally require:

- ten to fourteen years of general education;
- two to four years experience in related subordinate positions or on-the-job training.

Supervisors in this chapter normally require:

- ten to twelve years of general education;

- one to five years experience in related subordinate positions or on-the-job training.

Managing Supervisors and Supervisors, Service Occupations are usually selected from employees who have demonstrated leadership qualities and initiative in lower level jobs. They may receive formal training in such subjects as business management, job relationships and job instruction training from their employers.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter who demonstrate potential for further development, may advance to higher supervisory or managerial positions. For example, 6160-110 MANAGING SUPERVISOR, LAUNDERING, DRY-CLEANING ESTABLISHMENT may advance to 1142-122 AREA MANAGER, LAUNDRY AND DRY CLEANING; and 6190-110 FOREMAN, JANITORS, CHARWORKERS AND CLEANERS to 1142-126 BRANCH MANAGER, JANITORIAL SERVICES.

Transfer

Transfer for workers in this chapter is limited because of the specialized nature of the work involved. However, some workers may transfer between occupations within this chapter or to occupations concerned with selling services; for example, 6130-114 MANAGING SUPERVISOR, HOTEL, MOTEL AND LODGING HOUSE could transfer to 5177-114 SALES REPRESENTATIVE, HOTEL SERVICES.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry into occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- activities resulting in prestige or the esteem of others.

Temperaments

- the direction, control, and planning of an entire activity or the activities of subordinate service personnel;
- dealing with people in actual job duties beyond giving and receiving instructions, such as listening to customer complaints.

Additionally, for Managing Supervisors:

- the evaluation of information against sensory or judgmental criteria, for example, estimating customer demands and determining goods or services to be sold;
- a variety of duties often characterized by frequent change.

OTHER REQUIREMENTS

- initiative and drive;
- ability to motivate people to work co-operatively and conscientiously;
- ability to maintain harmonious working relationships among workers;
- when performing the work of subordinates, is required to have the same aptitudes, capacities, interests and temperaments as the workers.

FIRE-FIGHTING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with providing protection against fire, fighting fires and protecting lives and property. Worker functions include: manipulating tools, hoses and controls of fire extinguishing apparatus; driving vehicles and operating pumping equipment; co-ordinating and supervising activities of fire-fighting personnel; and comparing structural characteristics, composition and contents of buildings to determine compliance with fire regulations, or to detect fire hazards or establish causes of fires. Work activities include: inspecting fire-fighting equipment and buildings; participating in and training others in fire-fighting techniques; responding to alarms and emergency calls; extinguishing fires; rescuing persons and animals; retrieving materials and equipment; and administering first aid.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
6111-110	FIRE CHIEF (gov. serv.)	4	8	6111-114	FIRE CAPTAIN (gov. serv.)	4	7
				6111-118	FIRE CHIEF (any ind.)	4	7

B

		GED	SVP			GED	SVP
6111-122	FIRE FIGHTER, CRASH (gov. serv.)	3	6	6111-126	FIRE FIGHTER (any ind.)	3	6

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>4</u>	4	4	4	4	5	L 4567	B 3467	4	8-7	526	458109
	<u>2</u>	<u>2</u>				<u>3</u>											
B	<u>3</u>	<u>4</u>	5	<u>2</u>	<u>3</u>	5	<u>3</u>	4	<u>3</u>	<u>2</u>	5	M-H 2347	B 3467	3	6	019	89015
						<u>3</u>											

APTITUDES AND CAPACITIES

Workers in Cluster A require:

- learning ability to understand and apply fire regulations, fire-fighting methods and emergency procedures, and reasoning ability and judgment to apply appropriate techniques to actual fire-fighting situations;
- verbal ability to understand and effectively use language and terminology found in instructions and regulations specific to fire prevention, fire fighting, rescue and first aid; to instruct personnel in fire-fighting methods; and to direct operations at scenes of fires;
- numerical ability to make calculations of quantity, size and type of fire-fighting equipment required, to prepare estimates for purchases of materials, and to appraise fire losses;
- spatial perception to visualize relationships of buildings and fire-fighting equipment to avoid falling walls, or overhead wires and objects when raising ladders, and when moving vehicles in congested areas;
- form perception to see slight differences in detail of objects or materials to detect fire hazards or determine causes of fires;
- clerical perception to observe detail in reports or instructions and to avoid perceptual errors when ordering equipment and supplies;

- capacity to extend arms and hands in any direction to handle hoses and use axes, chisels, crow-bars, chain saws and similar tools;
- visual acuity and depth perception to detect fire hazards, determine source, nature and extent of fires, observe gauges on fire-truck equipment, direct chemicals or water on fire, or give orders to fire fighters from a distance;
- capacity to work both inside and outside while exposed to water, and extremes of heat from fires and cold temperatures;
- capacity to work while exposed to physical hazards such as fire, smoke, gases, flying debris, ice, exploding fuel and munitions, falls from roofs or ladders, burns, asphyxiation or electrocution.

Workers in Cluster B require:

- learning ability to understand and apply fire regulations, fire-fighting methods and emergency procedures, and reasoning ability and judgment to apply appropriate techniques to actual fire-fighting situations;
- verbal ability to understand and effectively use language and terminology found in instructions and regulations specific to fire prevention, fire fighting, rescue and first aid;

- spatial perception to visualize relationships of buildings and fire-fighting equipment to avoid falling walls, overhead wires and objects when raising ladders, and moving vehicles in congested areas;
- form perception to see slight differences in detail of objects or materials to detect fire hazards or determine causes of fires;
- eye-hand co-ordination to quickly control and direct streams of water or chemicals on fire;
- manual dexterity to position ladders, hold safety nets, connect hoses, turn valves, use inhalators and apply artificial respiration;
- eye-hand-foot co-ordination to drive trucks, climb ladders, balance and walk on ledges, and perform rescue operations;
- strength to perform medium to heavy work requiring frequent lifting of equipment weighing up to fifty pounds, occasionally using considerable physical effort while rescuing persons;
- agility to climb and balance on ladders at great heights, and to stoop, kneel and crouch, while fighting fires and applying artificial respiration;
- capability of extending arms and hands in any direction to handle hoses and use axes, chisels, crow-bars, chain saws and similar tools;
- clarity of vision to detect fire hazards, to determine source, nature and extent of fires, observe gauges on fire-truck equipment, direct chemicals or water on fire, or give orders to fire-fighters from a distance;
- capacity to work both inside and outside while exposed to water and extremes of heat from fires and cold temperatures;
- capacity to work while exposed to physical hazards, such as fire, smoke, gases, flying debris, ice, exploding fuel and munitions, falls from roofs or ladders, burns, asphyxiation or electrocution.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to eleven years of general education, and progressive experience in fire-fighting occupations for periods of three to eight years. Some fire chiefs may require three to four years of specialized experience in fighting chemical and oil fires.

B

- nine to eleven years of general education, an initial training program for a period of one month, and on-the-job training for one to two years;
- current motor-vehicle operator's or chauffeur's licence;
- passing of medical examination to meet physical requirements;
- personal assessment and written or oral examination for permanent appointment.

ADVANCEMENT AND TRANSFER POSSIBILITIES

A

Advancement

Workers in this cluster who have the necessary fire-fighting experience and abilities, may advance to similar positions in governmental or industrial organizations, involving more responsibility and increased remuneration.

Transfer

Workers in this cluster who have the necessary aptitudes, interests and temperaments, may transfer to related occupations such as 1116-166 FIRE INSPECTOR, 1176-162 FIRE-SAFETY INSPECTOR, and 5133-110 MANUFACTURERS' AGENT.

B

Advancement

Workers in this cluster who have the necessary fire-fighting experience, seniority and abilities, may advance to positions of higher rank or remuneration within this cluster. In addition some workers who have the necessary experience and potential for planning, supervising, instructing and leadership, may advance to occupations in Cluster A.

Transfer

Workers in this cluster who have the necessary abilities may transfer, with further training, to other occupations as described in the transfer section for Cluster A.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- work resulting in prestige or the esteem of others;
- business contact with people, as reflected in activities such as training, supervising and assigning duties to workers;
- dealing with people and communicating ideas concerned with fire protection and safety.

Temperaments

- planning, directing and controlling an entire activity, such as the operations of a fire department of a municipality or an industrial establishment;
- dealing with people in actual job duties beyond giving and receiving instructions, such as inspecting premises and advising persons on fire hazards and regulations;
- performing adequately during fire-fighting operations, when confronted with the unexpected or while under stress, or taking risks;
- a variety of duties often characterized by frequent change;
- evaluating information against measurable or verifiable criteria, such as fire regulations or operational procedures, to arrive at decisions;
- evaluating information against sensory or judgmental criteria to arrive at decisions, such as those required to resolve problems during major conflagrations or in emergency situations.

B

Interests

- activities leading to satisfaction from tangible results;
- dealing with things and objects as evidenced by the use of different kinds of fire-fighting tools and equipment;
- work requiring the application of a variety of techniques and equipment.

Temperaments

- performing adequately during fire-fighting operations, when confronted with the unexpected or while under stress, or taking risks;
- evaluating information against sensory or judgmental criteria to arrive at decisions, such as those required to quickly resolve problems during major conflagrations or emergency situations;
- evaluating information against measurable or verifiable criteria, such as fire regulations or operational procedures to arrive at courses of action to be followed;
- a variety of duties often characterized by frequent change;
- dealing with people in actual job duties, such as inspecting premises and advising persons regarding fire hazards and regulations.

POLICEMEN AND DETECTIVES, GOVERNMENT

WORK PERFORMED

This chapter includes occupations concerned with protecting the public, maintaining law and order, preventing and detecting crime, directing and controlling traffic, and conducting investigations. Worker functions include: co-ordinating, planning and directing operations of federal, provincial or municipal police forces; analyzing data concerned with police organization, investigations, and criminal acts; supervising personnel; speaking with people to enforce laws and regulations, arrest violators, investigate accidents and crimes, and testify in court; handling rescue and investigation equipment, firearms, and exhibits used as evidence; and driving vehicles and operating motor boats. Work activities include: instructing personnel concerning statutes, regulations, orders, procedures and techniques of police work; investigating complaints, crimes or accidents; apprehending criminals and locating lost or missing persons; administering first aid; and giving evidence in court.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
6112-110	POLICE CHIEF (gov. serv.)	4	9	6112-126	POLICE INSPECTOR, HEADQUARTERS (gov. serv.)	4	8
6112-114	DETACHMENT COMMANDER (gov. serv.)	4	8	6112-130	TRAFFIC INSPECTOR (gov. serv.)	4	8
6112-118	DETECTIVE INSPECTOR (gov. serv.)	4	8	6112-134	STAFF INSPECTOR, POLICE (gov. serv.)	4	8
6112-122	POLICE INSPECTOR (gov. serv.)	4	8	6112-138	STATION-DUTY OFFICER (gov. serv.)	4	7

B

		GED	SVP			GED	SVP
6112-142	IDENTIFICATION OFFICER (gov. serv.)	4	7	6112-158	POLICEMAN (gov. serv.)	3	5
6112-146	DETECTIVE (gov. serv.)	4	7	6112-162	POLICEWOMAN (gov. serv.)	3	4
6112-150	PATROLMAN, TRAFFIC (gov. serv.)	4	6	6112-166	WAGON PATROLMAN (gov. serv.)	3	4
6112-154	HARBOUR POLICEMAN (gov. serv.)	3	5	6112-170	POLICE CADET (gov. serv.)	3	4*
				6112-174	PARKING-CONTROL OFFICER (gov. serv.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	3	4	4	<u>3</u>	4	4	4	5	4	S-L 567	I-B 6	4	9-7	265	4598
	<u>3</u>	<u>3</u>			3					3							
B	<u>3</u>	<u>3</u>	3	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	L-H 4567	B 6	4-2	7-2	265	5890
			4	3	4	<u>4</u>	4		4	4	5						589

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to acquire knowledge of laws and regulations and learn investigative procedures and methods;
- verbal ability to understand technical language of statutes, laws and regulations and to communicate effectively with people at all levels;

- clerical perception to prepare reports and maintain administrative, financial, police and personal records;
- adaptability to situations in which there is a risk of bodily injury.

Workers in Cluster B also require:

- spatial perception to visualize circumstances of crime from the

- arrangement of evidence at the scene, and to analyse relative positions of vehicles following an accident in order to determine the cause;
- eye-hand-finger co-ordination and manual dexterity to administer artificial respiration or first aid, to restrain persons, to handle firearms, and to operate vehicles;

- eye-hand-foot co-ordination, to drive various types of land or water vehicles and to maintain balance when controlling mobs, apprehending persons, and performing mounted patrol duties;
- strength to perform light to heavy work, participate in physical training, lift injured or deceased persons, prisoners, life-saving equipment, heavy objects or exhibits, and to restrain mobs.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- four to fifteen years of progressive experience in law-enforcement activities;
- for administrative occupations, completion of a university program in business administration, criminology and police science or law-enforcement is desirable.

B

- ten to twelve years of general education;
- three months to one year of probationary training;
- two to ten years of experience combined with on-the-job training programs to enable eventual specialization.

For 6112-174 PARKING-CONTROL OFFICER, who is not a policeman, the normal requirement is up to nine years of general education and on-the-job training courses of up to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in these clusters with sufficient experience, may advance from a lower to a higher level or rank. Some workers in Cluster A with experience in planning, organizing, directing and controlling police personnel, may advance to 1113-122 SENIOR ADMINISTRATOR, GOVERNMENT DEPARTMENT, as commissioner of provincial or metropolitan police forces. With the exception of parking-control officers, workers in Cluster B, who have considerable police experience, may advance to occupations in Cluster A.

Transfer

Workers in both clusters may transfer to investigative or security occupations in private, industrial or business establishments.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- situations involving business contact with people;
- dealing with people and communicating ideas;
- situations resulting in prestige or esteem of others.

Temperaments

A

- directing, controlling, and planning police activities and activities of subordinates;
- dealing with people in actual job duties beyond giving and receiving instructions;
- performing adequately under stress when directing the activities of men working in the face of danger or resistance;
- evaluating information against sensory or judgmental criteria, to arrive at decisions in planning, directing, and co-ordinating police operations, determining facts in investigations, and supervising police personnel.

B

- dealing with people in actual job duties beyond giving and receiving instructions, as in investigating accidents, or enforcing laws;
- performing adequately under stress when confronted with the critical or taking risks, as in apprehending unruly criminals;
- evaluating information against sensory or judgmental criteria, to arrive at decisions and to determine facts in investigations.

OTHER REQUIREMENTS

- maturity to accept discipline, take or give orders, make decisions, and to handle the public with authority but not arrogance;
- dignity and personal integrity in order to acquire the confidence of other policemen and the public.

POLICEMEN AND INVESTIGATORS, PRIVATE**WORK PERFORMED**

This chapter includes occupations concerned with protecting lives and private property, maintaining order, investigating irregularities concerning fire, sabotage or intrusions, and conducting private investigations. Worker functions include: determining procedures for use in investigations; analyzing data and compiling reports; comparing credentials; questioning individuals to obtain information or evidence; and supervising activities of private policemen and investigators. Work activities include: patrolling employer's premises; observing persons to detect unlawful practices or irregularities; conducting investigations of irregularities or reports of crime; obtaining assistance from local police; and driving vehicles to conduct investigations or respond to alarms.

LIST OF OCCUPATIONAL TITLES**A****GED SVP**

**6113-110 SUPERVISOR, POLICEMEN AND
INVESTIGATORS, PRIVATE**
(bus. serv.)

4 7

B**GED SVP**

6113-114 PRIVATE INVESTIGATOR
(bus. serv.)

4 6

6113-118 SPECIAL AGENT, RAILWAY
(bus. serv.)

4 5

**6113-122 INVESTIGATOR, BUSINESS
ESTABLISHMENT (bus. serv.)**

3 5

6113-126 ALARM INVESTIGATOR
(bus. serv.)

3 4

6113-130 POLICE CONSTABLE, RAILWAY
(bus. serv.)

3 4

6113-134 SHOPPING INVESTIGATOR
(bus. serv.)

3 3

6113-138 HOUSE DETECTIVE (bus. serv.)

3* 3

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	4	5	5	S 56	I	4	7	256	4590
B	<u>3</u>	<u>3</u>	4	4	<u>4</u>	<u>3</u>	<u>4</u>	4	<u>4</u>	<u>3</u>	5	L 4567	I-B 6	4-3	6-3	26	589
						4			3	4							

APTITUDES AND CAPACITIES

Supervisors, Policemen and Investigators, Private require:

- learning ability to understand legal principles and regulations, reasoning ability to interpret policies, and judgment to select and apply the appropriate protective or investigative procedures;
- verbal ability to understand the meanings of regulations and to communicate with staff members regarding the requirements and techniques for protecting clients' property;
- clerical perception to observe detail in reports and to avoid perceptual errors when reviewing written material such as time sheets, expense accounts, invoices or clients' billings;
- capacity to clearly hear information given by radio or telephone or during conversations.

Workers in Cluster B require:

- learning ability to understand and apply the principles and techniques of private investigation;
- verbal ability to understand the language used in regulations and instructions, to obtain information by effective questioning, to prepare statements from notes taken during interviews, and to give evidence in court;
- form perception to note pertinent detail in materials and objects;

- clerical perception to observe detail in instructions and to detect errors, such as those in sales slips, lists, schedules or reports, during investigations;
- eye-hand co-ordination and manual dexterity, except for 6113-134 SHOPPING INVESTIGATOR, to apprehend and detain persons, and additionally for 6113-126 ALARM INVESTIGATOR, to reset, adjust and make minor repairs to alarm equipment;
- eye-hand-foot co-ordination to drive vehicles at high speed in response to alarms while using two-way radio, and to maintain balance and protect self when making arrests;
- capacity to reach and restrain persons with hands, occasionally requiring considerable strength;
- capacity to clearly hear detailed information over radio or telephone and during interviews or conversations, and to distinguish sounds during investigations;
- visual acuity to perceive the detailed characteristics of persons or objects, depth perception and field of vision to observe activities of suspects and to detect violations, and colour vision to distinguish alarm or signal lights;
- adaptability to exposure to physical injury when arresting or restraining persons.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- eleven to twelve years of general education;
- completion of on-the-job training from periods of three to five years, including courses in protective and investigative work.

B

- nine to eleven years of general education;

- on-the-job training from periods of three months to a year;
- current motor vehicle operator's or chauffeur's licence.

A licence and permit to carry firearms may be required for some investigators. Previous experience in a police force may be required by some employers and evidence of ability to obtain a financial bond may also be specified prior to employment.

ADVANCEMENT AND TRANSFER POSSIBILITIES

A

Advancement

Experienced supervisors of private policemen and investigators may advance to similar positions in larger organizations involving additional responsibility and increased remuneration.

Transfer

Supervisors of private policemen and investigators, who have the necessary abilities, and with some additional training, may transfer to related occupations such as 6115-110 SUPERVISOR, CORRECTIONAL OFFICERS or 6115-114 SECURITY GUARD, CHIEF.

B

Advancement

Workers in this cluster who have experience and potential, may advance to become 6113-110 SUPERVISOR, POLICEMEN AND INVESTIGATORS, PRIVATE or advance to positions in larger organizations, involving more responsibility and increased remuneration. Some workers, such as 6113-118 SPECIAL AGENT, RAILWAY and 6113-130 POLICE CONSTABLE, RAILWAY, may advance with seniority through progressive levels or ranks to positions of higher remuneration.

Transfer

Workers in this cluster, who have ability and meet the specified requirements, may transfer with additional training to municipal or other government police work. See Chapter 6112, POLICEMEN AND DETECTIVES, GOVERNMENT.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- business contact with people through conducting investigations and protecting private property on a fee basis;
- work resulting in prestige or the esteem of others;
- dealing with people and communicating ideas as reflected in activities such as supervising and training workers, reviewing reports of investigators, and assisting clients in the solution of security problems.

Temperaments

- the direction, control and planning of an entire activity or activities of others, such as the operation of a private police or investigation agency;
- dealing with people in actual job duties, beyond giving and receiving instructions, such as successfully resolving complaints or advising clients regarding the protection of private property;
- the evaluation of information against sensory or judgmental criteria to arrive at decisions when interpreting investigation reports or assessing implications of reported irregularities;
- the evaluation of information against measurable or verifiable criteria, such as statements from witnesses, photographs, or reports of infractions to arrive at decisions.

B

Interests

- business contact with people such as interviewing persons and gathering information during investigations;
- dealing with people and communicating ideas such as those concerned with the methods of protecting property, preserving order, or conducting private investigations.

Temperaments

- dealing with people in actual job duties beyond giving or receiving instructions such as initiating action to investigate disturbances or reports of crime, or to protect private property or apprehend persons suspected of contravention of the law;
- performing adequately under stress when confronted with the unexpected or taking risks such as those involved when restraining or arresting persons;
- the evaluation of information using sensory or judgmental criteria to arrive at decisions.

OTHER REQUIREMENTS

- honesty and dependability;
- good health and stamina.

CORRECTIONAL OFFICERS AND MATRONS

WORK PERFORMED

This chapter includes occupations concerned with guarding prisoners and juvenile persons held in penitentiaries, reformatories, police stations or detention rooms. Worker functions include: supervising and co-ordinating the activities of correctional staff members; explaining regulations and answering inquiries; and observing inmates to compare their conduct and behaviour for evidence of forbidden activities and to prevent disturbances and escapes. Work activities include: searching prisoners and cells for weapons, drugs or other harmful articles; inspecting locks, window-bars, grills, doors and gates for evidence of tampering or malfunctioning; and caring for sick prisoners.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

6115-110 SUPERVISOR, CORRECTIONAL OFFICERS (gov. serv.)

4 7

6115-118 MATRON, HEAD (gov. serv.)

GED SVP

3 4

B

GED SVP

6115-130 CORRECTIONAL OFFICER (gov. serv.)

3 4

6115-142 MATRON (gov. serv.)

GED SVP

2 2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	4	4	4	<u>4</u>	4	4	4	4	5	S-L 567	I 6	4-3	7-4	25	4508
										5							
B	3	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>4</u>	4	5	L 4567	I 6	3-2	4-2	23	58
	4				<u>4</u>												258

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply the laws, regulations and procedures governing the custody of prisoners;
- verbal ability to communicate effectively with superiors, peers, subordinates and persons held in custody;
- clerical perception to read or prepare reports and to review work records of subordinates;
- capacity to work while exposed to the threat of assaults from unruly prisoners.

B

- learning ability to understand and implement the regulations and

procedures concerned with guarding prisoners in detention rooms or penal institutions;

- form perception to recognize signs of tampering when inspecting locks, grills and doors for security;
- eye-hand-finger co-ordination and manual dexterity to render first aid, and to search prisoners for weapons and other prohibited articles;
- capacity to speak to prisoners to explain rules and regulations and to maintain discipline, and good hearing to detect abnormal or suspicious sounds;
- capacity to work while exposed to the threat of assaults from unruly prisoners.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;

- from two to four years of progressive experience and training as correctional officers (or matrons).

B

- no specific minimum educational standards although twelve years of general education are usually preferred;

- up to six months of on-the-job training, with courses of study provided by the employing agency.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement****A**

Workers in this cluster who possess the required academic background and work experience may advance to more responsible positions in their own organization or to similar positions in larger organizations involving increased remuneration.

B

Correctional officers and matrons may advance to supervisory positions in Cluster A if they have leadership abilities and the necessary training and experience.

Transfer**A**

Workers in this cluster may transfer to positions requiring similar skills such as, 6115-114 SECURITY GUARD, CHIEF.

B

Provided they are given additional training, it is possible for workers in this cluster to transfer to occupations requiring similar skills, such as 6115-122 ARMoured-CAR GUARD, or 6115-138 SECURITY GUARD.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A**Interests**

- business contact with people;
- work resulting in prestige or the esteem of others.

Temperaments

- the direction, control, and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against measurable or verifiable criteria;
- performing adequately under stress when confronted with the critical or unexpected, or taking risks.

B**Interests**

- business contact with people;
- activities of a routine, concrete, organized nature.

Temperaments

- dealing with prisoners in job duties;
- performing adequately under stress when confronted with the critical or unexpected, or taking risks.

Additionally, for 6115-142 MATRON:

- repetitive or short cycle operations performed according to set procedures or sequences.

OTHER CLUES AND REQUIREMENTS**Other Clues**

- military training, or experience in federal, provincial or municipal police departments, is a definite asset for those who wish to enter these occupations.

Other Requirements

- good physical and mental health;
- good moral character and dependability;
- no criminal record.

GUARDS AND WATCHMEN

WORK PERFORMED

This chapter includes occupations concerned with guarding and protecting industrial, commercial and private property against fire, vandalism, illegal entry or theft; and ensuring the safety of pedestrians and motorists at street or railway crossings. Worker functions include: supervising and co-ordinating the activities of guards and watchmen; observing patrolled areas or work site and comparing behaviour of people to detect irregularities or suspicious activities; answering questions, giving directions and explaining regulations; signalling motorists and pedestrians of approaching trains or traffic; recording data concerning damage to property, deliveries or receipts, and identity of persons and vehicles entering or leaving establishments; driving guard vehicles; and handling stop signs, lanterns and gates. Work activities include: guarding money and other valuables during transit to prevent theft; checking alarm, safety and utility systems, locks, windows and doors for security; registering at designated stations during inspections; opening gates or doors to allow entrance or exit of people and vehicles; and servicing fire-arms.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

6115-114 SECURITY GUARD, CHIEF
(bus. serv.)

3 5

B

GED SVP

6115-122 ARMoured-CAR GUARD
(bus. serv.)

3 4

6115-134 GATEMAN (bus. serv.)

GED SVP

2 3

6115-138 SECURITY GUARD (bus. serv.)

2 3

6115-126 CONVOY GUARD (bus. serv.)

3 4

C

GED SVP

6115-146 WATCHMAN, CROSSING
(rail trans.)

2 2

6115-150 SCHOOL-CROSSING GUARD
(gov. serv.)

GED SVP

2 2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	<u>3</u>	4	4	4	<u>4</u>	4	4	4	4	4	S 567	I 6	3	5	25	4508	
B	3	4	4	4	<u>4</u>	<u>4</u>	<u>4</u>		4	4	5	L-M 4567	B 6	3-2	4-3	13	28	
	4										5					23	258	
										<u>3</u>								
C	4	4	5	<u>4</u>	4	4	4	4	<u>4</u>	4	4	L 4567	O-B	2	2-2	31	23	
						5				5	5							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply security regulations and the procedures involved in supervising the activities of guards;
- verbal ability to communicate effectively with subordinates and with police, fire and civil defence authorities;
- clerical perception to avoid perceptual errors when reading or writing directives and reports;
- good vision to detect safety hazards when inspecting premises.

B

- learning ability to understand and follow security procedures such as those involved in the safeguarding of valuables during transit to banks and business establishments, and in the security of buildings or other premises;
- form perception is required when carrying out detailed security inspections;
- clerical perception to correctly record information, such as personnel entry and departure times, and nature, quantity and destination of valuables in transit;
- eye-hand co-ordination to perform duties, such as operating punch clocks, and ensuring doors, windows and gates have been locked;
- capacity to work while exposed to risk of injury during attempted robberies, fires or other emergencies.

Additionally, for 6115-126 CONVOY GUARD:

- spatial perception and eye-hand-foot co-ordination to drive vehicles.

C

- learning ability to understand instructions and perform duties correctly to ensure safety of motorists and pedestrians;
- spatial perception to judge speed and distance of approaching vehicles or trains and ensure safety at crossings;
- manual dexterity to wave stop signs or lantern to direct motorists or pedestrians;
- capacity to speak to children and motorists regarding safety regulations and to hear approaching trains and vehicles.

Additionally, for 6115-150 SCHOOL-CROSSING GUARD:

- capacity to work under all weather conditions.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten to twelve years of general education; and
- six months to one year of previous experience as 6115-138 SECURITY GUARD.

B

- eight to ten years of general education; and
- progressive experience, including on-the-job training, of one to six months.

C

- six to eight years of general education; and
- on-the-job training of a few days to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter, who possess the necessary experience and ability in security work, may advance to supervisory positions or to similar positions at a higher level of remuneration and responsibility within their own or larger organizations.

Transfer

Workers in this chapter may transfer, with short periods of training, to other occupations within this chapter where similar skills are required in providing security to guard services. Workers in Cluster A and B who possess the necessary training and experience may also transfer to some occupations in Chapter 6113 POLICEMEN AND INVESTIGATORS, PRIVATE, such as 6113-134 SHOPPING INVESTIGATOR, and 6113-138 HOUSE DETECTIVE.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interest in, and dispositions for work involving the following:

A

Interests

- business contact with people;
- work resulting in prestige or the esteem of others, such as directing activities of staff during fires, storms and other emergencies, and co-operating with police, fire and civil defence authorities concerning problems affecting establishment security.

Temperaments

- the direction, control, and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against measurable or verifiable criteria;
- performing adequately under stress when confronted with the unexpected, such as directing activities of subordinates at fires.

B

Interests

- work of a routine, concrete and organized nature;
- dealing with things and objects, such as money and valuables.

Additionally, for 6115-134 GATEMAN, and 6115-138 SECURITY GUARD:

- business contact with people.

Temperaments

- repetitive or short cycle operations performed according to set procedures or sequences;
- performing adequately under stress when confronted with the critical or unexpected, or taking risks.

Additionally, for 6115-134 GATEMAN, and 6115-138 SECURITY GUARD:

- dealing with people in actual job duties beyond giving and receiving instructions.

C

Interests

- activities of a routine, concrete, organized nature;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations performed according to set procedures or sequences;
- doing things only under specific instructions, allowing little or no room for independent action or judgment.

OTHER CLUES AND REQUIREMENTS

Other Clues

- military training, or experience in federal, provincial or municipal police departments, is a definite asset for those who wish to enter these occupations.

Other Requirements

- mental alertness, emotional stability, good judgment and dependability are other important qualities required for guards and watchmen.

PROTECTIVE SERVICES OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with providing other protective services, such as enforcing fish and game regulations, providing life guard services at swimming areas, performing attendant duties at federal and provincial parks, and patrolling ski trails and slopes.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
6119-110	CONSERVATION OFFICER (gov. serv.)	<u>3</u>	<u>3</u>	3	3	3	3	4	4	4	<u>4</u>	4	L 57	O	4	6	62	590Y
6119-114	LIFEGUARD (amuse. & rec.)	3	3	4	4	3	4	<u>4</u>	4	<u>3</u>	<u>3</u>	5	H 4567	O 4	3	4	45	589
6119-118	SKI PATROLMAN (amuse. & rec.)	3	3	5	4	3	4	<u>4</u>	4	<u>3</u>	<u>3</u>	5	H 2347	O 6	2	3	45	598
6119-122	PARK ATTENDANT (gov. serv.)	4	<u>4</u>	<u>4</u>	4	4	<u>4</u>	4	4	4	5	5	S 56	B	2	2	23	52

CHEFS AND COOKS

WORK PERFORMED

This chapter includes occupations concerned with preparing and cooking foods in hotels, restaurants, clubs, dining-rooms, private households, institutions, and other establishments. Worker functions include: working to precise standards to cook foods according to recipes; handling food-stuffs when measuring, cleaning and preparing specified ingredients; manipulating kitchen utensils, equipment and appliances; and compiling information on menus, food arrangements and cooking methods. Work activities include: recording food inventory and requisitioning needed supplies; mixing ingredients; examining foods for freshness and proper cooking; and carving and serving portions for meals.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
6121-110	SPECIALIST CHEF (cater. & lodg.)	4	8	6121-118	COOK, DOMESTIC (pers. serv., n.e.c.)	3	6
6121-114	COOK (cater. & lodg.)	4	7	6121-122	COOK, INSTITUTION (cater. & lodg.)	3	6

B

		GED	SVP			GED	SVP
6121-126	COOK, SPECIALITY FOODS (cater. & lodg.)	3	3	6121-130	SHORT-ORDER COOK (cater. & lodg.)	3	3

C

		GED	SVP
6121-134	COOK, HELPER (cater. & lodg.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	<u>3</u>		<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>4</u>	L-M 47	I 367	4-3	8-6	9018 901	19YX 19Y
B	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I 367	3	3	91	9Y
C	4	4	4	4	4	4	<u>4</u>	<u>3</u>	<u>3</u>	5	4	M 47	I 367	2	3	31	23

APTITUDES AND CAPACITIES

Workers in Clusters A and B require:

- learning ability to acquire and use the techniques for planning menus and ordering, storing, preparing and cooking foods, and to understand and apply the rules of hygiene and sanitation;
- numerical ability to make calculations of food requirements and costs;
- form perception to examine food and to verify consistency, texture and quality of finished products by observation;
- eye-hand-finger co-ordination when cutting, decorating, and carving food and when working with kitchen utensils;
- finger dexterity to wash, peel, decorate, mould and garnish food;
- manual dexterity to slice and disjoint meat and poultry, mix ingredients, portion foods, knead and stretch dough and stir soups and sauces;
- physical capacity to stand most of the time, and to perform light to medium work requiring reaching and carrying of cooking utensils, stacks of dishes, trays, cases and containers of food weighing up to fifty pounds;
- visual acuity to properly clean and prepare foods for cooking;
- capacity to work while exposed to hazards such as burns, abrasions and cuts;
- adaptability to warm and humid conditions, and to odours of food;

- cooks working on trains and in ships require a sense of balance to maintain equilibrium.

Additionally, for Cluster A:

- clerical perception to correctly read recipes and to avoid errors when determining supply requirements and costs;
- colour discrimination, especially required for 6121-110 SPECIALIST CHEF, to recognize differences in colours and shades of food to

determine ripeness or freshness, or during cooking, and to decorate food according to designated colour scheme.

Workers in C require:

- learning ability to understand and apply simple instructions and to follow routine kitchen procedures;
- eye-hand-finger co-ordination, finger dexterity, and manual dexterity to cut fruit, vegetables, meat and poultry, to wash peel and seed fruit and vegetables, and to stir soups and sauces.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- eight to ten years of general education;
- a three to four-year apprenticeship program; or
- vocational training in a community college or vocational centre, and on-the-job training for a period of approximately three years; or
- progressive on-the-job training under the guidance of experienced cooks for a period of from one to two years.

B

- seven to nine years of general education;
- on-the-job or a combination of vocational and on-the-job training in the preparation of a limited variety of dishes for a period of up to three months.

C

- no specified educational requirements;
- up to thirty days of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Advancement for 6121-110 SPECIALIST CHEF is normally to establishments with a higher reputation for specialist foods. Cooks in Cluster A who have the necessary initiative and artistic abilities may advance to 6121-110 SPECIALIST CHEF. Chefs and Cooks in this cluster with supervisory ability may, with additional training in food management, advance to 6120-122 SUPERVISOR, CHEFS AND COOKS, or to 6120-110 MANAGING SUPERVISOR, DINING ESTABLISHMENT. See also Chapter 610, MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS, for qualifications profiles. Those who acquire the necessary knowledge of business practices may become owners of their own establishments.

B

Cooks in this cluster may advance to Cluster A provided they have acquired the necessary additional training. Those who acquire the necessary knowledge of business practices may become owner-operators of their own establishments.

C

These occupations are considered entry jobs, and advancement is to more highly skilled occupations within this chapter for workers who demonstrate ability, interest and initiative.

Transfer

A

Experienced Chefs and Cooks may utilize their knowledge of foods and ingredients and transfer to other occupations associated with food processing such as 8226-122 QUALITY-CONTROL INSPECTOR, 8213-114 BAKER, or 8213-246 CANDY MAKER. Others may transfer within their cluster.

B

Cooks in this cluster may transfer within the cluster, or to other food and beverage preparation occupations such as 6129-114 FOOD ASSEMBLER.

C

Cook Helpers may transfer to other elemental occupations requiring similar skills, such as 6125-130 CATERER HELPER, and 6198-134 KITCHEN HELPER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to processes, and techniques;
- activities leading to satisfaction from tangible results;
- dealing with things and objects such as foodstuffs and kitchen utensils, equipment and appliances.

Temperaments

- a variety of duties often characterized by frequent change;
- the evaluation of information against sensory or judgmental criteria, as in examining, feeling and tasting foods for quality, and experimenting with new recipes, methods and food combinations;
- the precise attainment of cooking standards following set measurements, time limits and temperature;
- the interpretation of feelings, ideas and facts in preparing food, mixing ingredients and adding condiments as necessary on the basis of personal judgment and experience; especially significant for 6121-110 SPECIALIST CHEF and 6121-114 COOK.

B

Interests

- non-social work, carried on in relation to processes and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against sensory or judgmental criteria, in preparing foods according to personal judgment and experience;
- the precise attainment of cooking standards.

C

Interests

- routine, concrete and organized work;
- working with things and objects such as foods and kitchen utensils.

Temperaments

- repetitive or short cycle operations carried out according to set procedures as in weighing and measuring ingredients and storing foods;
- performing duties only under specific instruction of cook.

OTHER REQUIREMENTS

- cleanliness;
- the ability to work under pressure during busy periods;
- a keen sense of taste and smell;
- creativity and artistic flare to prepare and serve local, regional and national dishes with imagination and finesse, especially significant for 6121-110 SPECIALIST CHEF.

BARTENDERS

WORK PERFORMED

This chapter includes occupations concerned with mixing and serving alcoholic and non-alcoholic beverages. Worker functions include: manipulating bar utensils and beverage containers to mix drinks according to patron's order; serving patrons with cocktails, wines, and draught and bottled beer; handling bottles, glasses and trays; and computing charges and making change. Work activities include: slicing and pitting fruit to be used as cocktail garnishes; ordering liquor and supplies; and keeping bar area neat and attractive.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
6123-110	BARTENDER (cater. & lodg.)	3	3	6123-114	TAPMAN (cater. & lodg.)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	<u>3</u>	4	4	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4		L 47	I	3-2	3-2	321	25Y
		<u>4</u>				5	4			5		L 4					

APTITUDES AND CAPACITIES

Bartenders require:

- learning ability to acquire a knowledge of various wines and liquors, and to understand and apply the techniques of preparing and serving beverages;
- numerical ability to perform simple calculations quickly and accurately when tabulating bill, making change, balancing cash and estimating stock requirements;

- eye-hand-finger co-ordination and manual dexterity to measure, pour, mix and garnish drinks;
- finger dexterity to make change rapidly and accurately;
- physical stamina to stand continually for long periods of time and ability to lift and carry bottles, cases and kegs.

TRAINING AND ENTRY REQUIREMENTS

Bartenders normally require:

- no specified minimum educational level, but grade ten is usually preferred;

- up to three months of on-the-job training under guidance of an experienced bartender; or
- a combination of vocational training, available in some provinces, and on-the-job training for a period of up to three months.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Bartenders who have experience and possess supervisory ability may advance to 6120-118 SUPERVISOR, BARTENDERS. See also Chapter 610, MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS, for qualification profiles. Some, with business ability, may become proprietors of their own establishments.

Transfer

Bartenders may transfer to occupations requiring similar skills in Chapter 6125, WAITERS, HOSTESSES AND STEWARDS, FOOD AND BEVERAGE after short periods of training.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work, such as preparing drinks according to standard recipes and techniques;
- business contact with people;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set bartending procedures or sequences;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the precise attainment of set limits, tolerances or standards, when following various recipes for mixing drinks.

OTHER REQUIREMENTS

Bartenders and tapmen must have neat personal appearance and cheerful manner, the ability to remember patrons' orders and the capacity to work under pressure during peak periods.

WAITERS, HOSTESSES AND STEWARDS, FOOD AND BEVERAGE

WORK PERFORMED

This chapter includes occupations concerned with serving food and beverages in public places such as hotels, clubs, restaurants, cocktail lounges, ships, railway-dining cars and drive-in restaurants. Worker functions include: speaking to customers to take orders for meals and drinks; serving clients by waiting on tables; manipulating serving utensils and tableware; and computing meal charges, accepting payment and making change. Work activities include: reserving and arranging tables, greeting and seating customers, and assisting them in choice of food and beverages.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP
6125-110	WAITER, FORMAL SERVICE (cater. & lodg.)	3	5

B

		GED	SVP			GED	SVP
6125-114	HOSTESS, RESTAURANT OR COFFEE-SHOP (cater. & lodg.)	2	3	6125-126	WAITER (cater. & lodg.)	2	2
6125-118	CAR HOP (cater. & lodg.)	2	2	6125-130	CATERER, HELPER (cater. & lodg.)	2	2
6125-122	COUNTERMAN, LUNCHROOM (cater. & lodg.)	2	2	6125-134	COUNTERMAN, CAFETERIA (cater. & lodg.)	2	2
				6125-138	WAITER, CAMP (cater. & lodg.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	3	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	4	4	L 456	I	3	5	213	527
B	4	4	<u>4</u>	4	4	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	4	4	L 456	I	2	3-2	213	523
			5			5					5						

APTITUDES AND CAPACITIES

Waiters, Hostesses and Stewards require:

- learning ability to acquire knowledge of menu items and food service techniques and to apply this knowledge when waiting on customers;
- numerical ability to compute bills and make change;
- clerical perception to correctly take down food orders and to avoid errors when computing bills;
- eye-hand-finger co-ordination and finger dexterity to arrange place settings, handle trays and utensils and garnish or decorate dishes;
- manual dexterity and ability to reach and make a variety of hand, wrist and arm movements when serving food and removing plates and utensils;

- physical capacity to perform duties requiring frequent standing and walking, pushing carts, carrying trays of food and stacking dishes;
- talking and hearing to receive and impart information when performing service duties such as, taking down food orders, adjusting complaints, advising patrons on food and beverages or ordering food from kitchen staff;
- eye-hand-foot co-ordination to carry loaded trays and serve patrons without spilling food and beverages is required by 6125-118 CAR HOP, and 6125-126 WAITER;
- form perception is required by 6125-110 WAITER, FORMAL SERVICE to detect irregularities when checking table settings and garnishing and decorating dishes.

TRAINING AND ENTRY REQUIREMENTS

Formal Waiters generally require:

- no minimum educational requirements are specified but some secondary school education is preferred;

- up to three months on-the-job training under supervision of head waiter;
- experience in related jobs such as 6125-126 WAITER.

CHAPTER 6125

Hostesses normally require:

- nine to ten years of general education;
- up to three months of training and experience as a waitress.

Waiters and related workers in Cluster B normally require:

- eight to nine years of general education;
- experience in related jobs such as 6198-122 BUS BOY, combined with on-the-job training lasting up to thirty days; or
- on-the-job training alone ranging from short demonstration to thirty days as required by the complexity of the job.

ADVANCEMENT AND TRANSFER POSSIBILITIES

A

Advancement

Experienced Formal Waiters who possess supervisory qualities may advance to 6120-126 SUPERVISOR, WAITERS, HOSTESSES AND STEWARDS, FOOD AND BEVERAGE. See also Chapter 610, MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS, for qualifications profile.

Transfer

Formal Waiters may transfer to occupations requiring similar skills such as 6149-122 BUTLER or 6123-110 BARTENDER. Lateral transfers to larger establishments may provide increased remuneration.

B

Advancement

Hostesses may advance to other positions involving public contact such as 4171-122 INFORMATION CLERK, that require similar personal qualities and skills.

Other Workers in Cluster B who have the necessary experience, personal appearance and manner may with further training advance to 6125-110 WAITER, FORMAL SERVICE.

Those who possess supervisory ability and experience may advance to 6120-126 SUPERVISOR, WAITERS, HOSTESSES AND STEWARDS, FOOD AND BEVERAGE. See also Chapter 610, MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS, for qualifications profile.

Transfer

Hostesses may transfer to occupations requiring similar skills such as 6149-134 COMPANION.

Waiters and related workers may transfer to other occupations within the cluster because of similarities in work performed. Some workers may transfer to other occupations requiring a short training period, such as 6129-114 FOOD ASSEMBLER or 6145-122 STEWARD, and 6198-122 BUS BOY or 6198-134 KITCHEN HELPER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations of Waiters, Hostesses and Stewards require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- dealing with things and objects;
- routine, concrete and organized work such as setting tables and transporting food from kitchen.

Temperaments

Formal Waiters

- dealing with people in actual job duties beyond giving and receiving instructions;
- repetitive or short cycle operations carried out according to set procedures such as writing orders and relaying orders to kitchen;
- influencing people in their opinions, attitudes or judgments, by recommending suitable wines or foods.

Waiters, Hostesses and Stewards

- dealing with people in actual job duties beyond giving and receiving instructions, such as adjusting complaints, making suggestions regarding foods and beverages and filling food orders;
- repetitive or short cycle operations carried out according to set procedures, such as welcoming patrons, presenting check to customer and receiving payment, transporting trays, cleaning tables and polishing counters;
- doing things only under specific instruction, allowing little or no room for independent action or judgment.

OTHER REQUIREMENTS

- neat, attractive appearance and good grooming.

FOOD AND BEVERAGE PREPARATION AND RELATED SERVICE OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with food and beverage preparation, and related activities such as examining food samples, analyzing food service records and unit costs, and assembling trays of food for serving.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS										
		Aptitudes										Ints. Temps.
		G	V	N	S	P	Q	K	F	M	E	
6129-110	ANALYST, FOOD AND BEVERAGE	<u>2</u>	3	<u>2</u>	4	4	<u>3</u>	4	4	4	5	<u>4</u>
	(cater. & lodg.)											
6129-114	FOOD ASSEMBLER	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	4
	(cater. & lodg.; medical)											

CHAMBERMAIDS AND HOUSEMEN

WORK PERFORMED

This chapter includes occupations concerned with maintaining hotels, motels, tourist homes, and other lodging facilities in a clean, attractive and orderly condition. The primary worker function is handling cleaning materials and equipment to perform routine housekeeping tasks. Work activities include: making beds, replenishing linens, cleaning rooms and halls and arranging furniture.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
6133-110	HOUSEMAN (cater. & lodg.)	2	3	6133-114	CHAMBERMAID (cater. & lodg.)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	4		M-H 234	14	2	3-2	31	31

APTITUDES AND CAPACITIES

Chambermaids and Housemen require:

- learning ability to perform housekeeping duties according to simple instructions;
- form perception to observe that windows, walls and floors are adequately washed, and that brass and chrome is polished;
- eye-hand-finger co-ordination and manual dexterity to sweep, mop,

- scrub, wax and polish floors, wash walls and windows, vacuum carpets, polish metalwork, make beds, and sort and fold linen;
- physical ability to stoop, kneel, crouch and reach while cleaning;
- agility to climb and maintain balance on ladders while hanging drapes or washing walls, and strength to move heavy furniture is required by 6133-110 HOUSEMAN.

TRAINING AND ENTRY REQUIREMENTS

Chambermaids and Housemen normally require:

- no specified minimum educational level, but grade eight is usually preferred;
- up to thirty days on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to more responsible duties and increase their earnings; for example, 6133-110 HOUSEMAN may advance to 6139-110 ATTENDANT, LODGING FACILITIES or to 6149-122 BUTLER; 6113-114 CHAMBERMAID may advance to 6149-114 MAID, DOMESTIC. Experienced workers with supervisory potential may eventually advance to 6130-126 EXECUTIVE HOUSEKEEPER. See also chapter 610, MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS, for qualifications profile. It is also possible for Chambermaids and Housemen who obtain financial backing to operate boarding and rooming houses or small motels and camps.

Transfer

Workers in this chapter may, after a short familiarization or training period, transfer to other occupations requiring similar skills and physical capabilities, such as 6135-114 BELLMAN; 6149-142 FARM HOUSEKEEPER; 6149-146 HANDYMAN; 6191-110 JANITOR; 6191-114 CHARWOMAN; and 6199-130 SANITATION SERVICEMAN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupations of Chambermaids and Housemen require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- dealing with things and objects such as brooms, mops, vacuum cleaners and other cleaning implements.

Temperaments

- performing tasks under specific instruction, allowing little or no room for independent action or judgment;
- a variety of duties often characterized by frequent change.

SLEEPING-CAR AND BAGGAGE PORTERS, AND BELLMEN

WORK PERFORMED

This chapter includes occupations concerned with handling luggage and providing a variety of related personal services for airline, railroad, motorbus, hotel or motel customers. Worker functions include: attending to the needs and requests of guests and passengers; and transporting luggage, by hand or using handtruck. Work activities include: escorting guests to rooms; preparing sleeping berths; running errands; assisting handicapped persons; delivering messages; and imparting information.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
6135-110	BAGGAGE PORTER (air trans.; motor trans.; rail. trans.)	2	2	6135-114	BELLMAN (cater. & lodg.)	2	2
				6135-118	SLEEPING-CAR PORTER (rail trans.)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5		M-H 2345	I-B	2	2	321	23
		4							<u>3</u>	4							

APTITUDES AND CAPACITIES

- Porters and Bellmen require:
- learning ability to understand and apply standard procedures and to perform routine duties;

— eye-hand co-ordination to handle luggage quickly;

— manual dexterity and ability to reach and stoop when picking up luggage, loading handtruck, and making berths;
- eye-hand-foot co-ordination to prevent tripping or falling when carrying luggage up and down stairs, and for 6135-118 SLEEPING-CAR PORTER, to maintain balance on moving train;

— physical capacity to stand and walk almost constantly and sufficient strength to perform medium to heavy work;

— capacity to work outside in varying weather conditions and temperatures, by 6135-110 BAGGAGE PORTER.

TRAINING AND ENTRY REQUIREMENTS

- Porters and Bellmen normally require:
- no specific educational requirements;

— up to thirty days of familiarization and on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement	Transfer
Experienced Baggage Porters and Bellmen with supervisory ability may advance to 6130-118 SUPERVISOR, BAGGAGE PORTERS AND BELLMEN. Experienced Sleeping-Car Porters with supervisory ability may advance to 6130-130 SLEEPING-CAR CONDUCTOR. See also Chapter 610, MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS, for qualifications profiles. Some Bellmen who have the required educational background and a sound knowledge of hotel operations and practices may advance to more responsible positions such as 4194-110 HOTEL CLERK.	Porters and Bellmen may transfer to occupations in other chapters which do not require extensive training, such as 6193-110 ELEVATOR OPERATOR, 6198-150 DOORMAN, and 6125-126 WAITER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations of Porter and Bellman require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work, such as carrying luggage and delivering telegrams;
- business contact with people;
- activities which deal with things and objects.

Temperaments

- repetitive operations carried out according to set establishment procedures;
- doing things only under specific instruction of supervisor or on request of guest or passenger, allowing little room for independent action or judgment.

OTHER REQUIREMENTS

Honesty, integrity, dependability, good grooming and a courteous and friendly manner.

GROUP 6139

OCCUPATIONS IN LODGING AND OTHER ACCOMMODATION, N.E.C.

This group includes occupations, not elsewhere classified, concerned with providing lodging and related services.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
6139-110	ATTENDANT, LODGING FACILITIES (cater. & lodg.)	<u>4</u>	4	<u>4</u>	5	4	<u>4</u>	4	4	<u>3</u>	4	5	M 34	B	2	3	23	253
6139-118	CAMP ATTENDANT (cater. & lodg.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	M 34	B	2	2	13	32

FUNERAL DIRECTORS, EMBALMERS AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with arranging funerals and burials, embalming human corpses, and related duties. Worker functions include: co-ordinating activities for the preparation and implementation of funerals; compiling relevant information on the deceased; supervising embalmers and funeral attendants; serving and assisting mourners; and working precisely when preparing body for interment. Work activities include: arranging time and place of service; contacting clergy and cemetery representatives; completing official documents, and publishing death notices; providing transportation for mourners and body; washing and draining body of natural fluids and other substances; restoring body to give life-like appearance; arranging coffin, lights and flowers in chapel; and issuing and storing funeral equipment.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

6141-110 FUNERAL DIRECTOR
(pers. serv., n.e.c.)

5 7

B

GED SVP

6141-114 EMBALMER (pers. serv., n.e.c.)

4 6

C

GED SVP

6141-118 FUNERAL ATTENDANT
(pers. serv., n.e.c.)

2 2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	<u>2</u>	<u>3</u>	<u>3</u>	4	3	4	4	4	5	4	M 4	B	5	7	265	4591	
B	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>3</u>	M 347	I 7	4	6	931	0Y	
C	<u>4</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	4	<u>4</u>	<u>4</u>	M 47	B	2	2	32	35	

APTITUDES AND CAPACITIES

Workers in this chapter require:

Funeral Directors

- learning ability to manage funeral home and arrange for and direct funeral service according to the wishes of family or authorized persons;
- verbal ability to interview members of family or their representative to discuss funeral arrangements and to console mourners;
- numerical ability to calculate funeral costs and determine finances involved in management of funeral home;
- spatial perception to visualize actual sequence of events at funeral and for knowledge of anatomy when embalming.

Embalmers

- learning ability to acquire and apply techniques of embalming;
- spatial perception to restore disfigured bodies to their normal appearance, and for knowledge of anatomy required to embalm bodies;
- form perception to apply cosmetics to impart life-like appearance to body;
- eye-hand-finger co-ordination, manual and finger dexterity to wash body, pack orifices with cotton, close incisions, dress the body and apply cosmetics;

- colour discrimination to apply cosmetics to bodies;
- physical strength to lift corpses with aid of other workers;
- ability to perform in atmosphere of noxious odours, such as those of embalming fluids.

Funeral Attendants

- learning ability to perform a variety of routine duties in connection with funerals;
- verbal ability to direct mourners at funeral;
- spatial perception to prepare parlour or chapel for funeral service;
- form perception to observe details when arranging floral displays and lighting around casket;
- eye-hand-finger co-ordination to move casket and other articles used at funerals, arrange flowers and close casket;
- eye-hand-foot co-ordination to carry flowers to hearse and place casket in parlour;
- strength to perform work requiring frequent lifting of equipment and casket usually with assistance of other workers.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

Funeral Directors

- eleven to twelve years of general education;
- qualification as embalmers;
- completion of licensing requirements.

Embalmers

- eleven to twelve years of general education;

- a two to three year apprenticeship program under the direction of a licensed embalmer which may be supplemented by part-time courses of study;
- completion of licensing requirements.

Funeral Attendants

- eight to ten years of general education; and
- up to one month of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Funeral Directors and Embalmers

Advancement

Funeral Directors who have acquired the necessary knowledge of business practices may become self-employed by forming their own company. Embalmers who have the necessary experience and ability may advance to 6141-110 FUNERAL DIRECTOR.

Transfer

There is no transfer pattern for these occupations.

Funeral Attendants

Advancement

Some Funeral Attendants who follow an apprenticeship program may advance to Embalmers.

Transfer

Transfer may be to some occupations such as 6149-154 USHER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Funeral Directors

Interests

- business contact with people;
- dealing with people and communicating ideas such as discussing and suggesting funeral plans with family of deceased;
- work resulting in prestige or the esteem of others.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against sensory or judgmental criteria such as helping family to decide on suitable funeral arrangements;
- a variety of duties often characterized by frequent change.

Embalmers

Interests

- non-social work, carried on in relation to techniques;
- routine, concrete and organized works such as following standard procedure for embalming;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria when preparing bodies for interment in conformity with legal requirements;
- the precise attainment of set limits, tolerances, or standards when restoring bodies to their normal appearance.

Funeral Attendants

Interests

- routine, concrete and organized work;
- business contact with people.

Temperaments

- doing things only under specific instruction, allowing little or no room for independent action or judgment;
- dealing with people in actual job duties beyond giving and receiving instructions such as escorting mourners.

OTHER REQUIREMENTS

- composure;
- Funeral Directors and Attendants should be able to deal with emotionally distraught people sincerely and calmly.

BARBERS, HAIRDRESSERS AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with providing barbering hairdressing, cosmetic and other beauty or personal services to improve the appearance of patrons. Worker functions include: comparing facial characteristics and features of patron's hair to assess effects of beauty treatments or hair styling on appearance; manipulating combs, scissors, clippers and brushes and other devices used for the care of hair and skin; and working to close tolerances when shaving whiskers or removing hair by electrolysis. Work activities include: applying cosmetics and make-up; trimming and shaping beards and moustaches; cutting, shampooing, colouring, curling, waving and styling hair; shaping and colouring eyebrows; massaging scalp; and cleaning, shaping and polishing fingernails.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
6143-110	MAKE-UP ARTIST (amuse. & rec.; pers. serv., n.e.c.)	4	6	6143-114	BARBER (pers. serv., n.e.c.)	3	6
				6143-118	COSMETOLOGIST (pers. serv., n.e.c.)	3	6

B

		GED	SVP			GED	SVP
6143-122	ELECTROLOGIST (pers. serv., n.e.c.)	4	5	6143-130	SCALP-TREATMENT SPECIALIST (pers. serv., n.e.c.)	3*	3

C

		GED	SVP
6143-126	MANICURIST (pers. serv., n.e.c.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	3	4	<u>4</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>2</u>	L 47	I	4-3	6	280	95X
					<u>3</u>			<u>2</u>			4						
B	<u>3</u>	3	4	3	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I	4-3	5-3	2	5Y
				4	<u>3</u>												
C	4	4	5	4	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>4</u>	S 47	I	2	3	23	35

APTITUDES AND CAPACITIES

Make-Up Artists, Barbers and Cosmetologists require:

- learning ability to understand and use the techniques of make-up, barbering and cosmetology;
- spatial perception to style hair to structural characteristics of patron's head and face, and to apply make-up to alter facial features;
- form perception to observe detail in skin and facial features, and condition of hair;
- eye-hand-finger co-ordination to apply cosmetics, style and tint hair, shape eyebrows, beards and moustaches, and fit hair pieces;
- finger dexterity to use scissors, curlers, pins and tweezers;

- manual dexterity to shampoo, cut and curl hair, and give facial and skin massages;
- colour discrimination to recognize and select a harmonious, contrasting or particular shade of dye, tint or make-up;
- physical stamina to continuously work in a standing position with the hands and arms extended.

Electrologists and Scalp-Treatment Specialists require:

- learning ability to understand and use the techniques of electrolysis, or scalp treatments;
- form perception to assess scalp condition, and to remove hairs through electrolysis;

- eye-hand-finger co-ordination to remove hair from follicle, and apply scalp medication;
- finger dexterity to use needles and tweezers;
- manual dexterity to make flexible hand and wrist movements when using vibrators and electrolysis equipment, or massaging scalp;
- physical stamina to stand and perform work which requires continuous reaching and extending of the arms.

Manicurists require:

- learning ability to acquire and apply manicuring techniques;

- form perception to determine nail and cuticle condition;
- eye-hand-finger co-ordination to shape and trim fingernails and toenails;
- finger dexterity to use cuticle knife, scissors, files, emery board and nail polish brush;
- manual dexterity and ability to reach when cleaning and polishing nails and applying hand creams;
- colour discrimination to distinguish between various shades of nail polish.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- eight to twelve years of general education;
- a one to three-year apprenticeship program; or
- a one to three-year program at a vocational school and on-the-job training;
- completion of provincial certification or licensing requirements.

Additionally, for 6143-110 MAKE-UP ARTIST there are no specified educational or training requirements. Experience is usually acquired by

working on the job for one or more years, depending on the complexity of the productions.

B

- eight to twelve years of general education;
- a three to twelve-month program of vocational training, usually provided by the employers, combined with on-the-job training.

C

- up to three months training at a vocational school combined with on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Competent workers in this chapter who build a reputation may advance to similar positions in other establishments offering increased remuneration. Those with supervisory ability and leadership qualities may advance to supervisors or shop managers; others may become demonstrators or representatives for cosmetic companies. Those who acquire management ability and knowledge in business practices may become self-employed. With further training some may become instructors or teachers.

Transfer

Without additional training there is little possibility of transfer within or outside this chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Make-Up Artists, Barbers and Cosmetologists

Interests

- business contact with people;
- abstract and creative work;
- activities leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against sensory or judgmental criteria when analyzing hair and skin conditions, and selecting the proper treatment or appropriate style to obtain an intended effect;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the interpretation of ideas and facts in terms of personal view point when deciding what hairstyle best suits a client.

Electrologists and Scalp-Treatment Specialists

Interests

- business contact with people.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions as when giving advice concerning facial or body hair and scalp condition;
- the precise attainment of set limits or standards when using short-wave electrical equipment and applying scalp treatment.

Manicurists

Interests

- business contact with people;
- routine, concrete and organized work.

Temperaments

- doing things only under specific instruction of client allowing little or no room for independent action or judgment;
- repetitive or short cycle operations carried out according to set manicuring routine.

GUIDES

WORK PERFORMED

This chapter includes occupations concerned with escorting people on sightseeing visits, travel tours and excursions. Worker functions include: co-ordinating transportation, accommodation, recreation and other arrangements for sightseers; describing points of interest, and historical and other pertinent information along tour routes and in public or historical buildings, museums and industrial plants; and driving sightseeing vehicles. Work activities include: communicating with agencies to make or confirm reservations concerning transportation, accommodation and recreational activities; and collecting tour tickets or fees.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
6144-110	GUIDE, TRAVEL (pers. serv., n.e.c.)	3	4	6144-118	GUIDE, ESTABLISHMENT	3 *	3 *
6144-114	GUIDE, SIGHTSEEING (pers. serv., n.e.c.)	2	3		(pers. serv., n.e.c.)		

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	4	4	4	4	<u>3</u>	4	<u>3</u>	4	4		L 5	B	3-2	4-3	26	145
	<u>4</u>	3	<u>3</u>		<u>3</u>	4	5	4	<u>3</u>								25
						5		5									

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to acquire, understand and retain information concerning points of interest, historical and other pertinent data related to a sightseeing tour, public building, or an industrial establishment's products, processes or services;
- verbal ability to communicate effectively with personnel of transportation agencies and hotel establishments concerning travel arrangements and reservations, and to clearly describe things of interest to patrons of tours.

Additionally, for 6144-110 GUIDE, TRAVEL:

- clerical perception to observe times, dates, locations, and other details in correspondence concerning travel arrangements.

Additionally, for 6144-114 GUIDE, SIGHTSEEING:

- spatial perception, manual dexterity and eye-hand-foot co-ordination to drive vehicles.

TRAINING AND ENTRY REQUIREMENTS

Guides normally require:

- ten to twelve years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced Travel Guides may advance to 4193-122 TRAVEL CLERK, or if qualified by related experience and demonstrated ability, to 4193-110 TRAVEL AGENT. Sightseeing Guides may advance to 9171-110 BUS DRIVER.

Transfer

Transfer for Travel Guides may be to 4193-118 TICKET CLERK. Sightseeing Guides and Establishment Guides may transfer to other public-contact work, such as 4171-122 INFORMATION CLERK.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- dealing with people and communicating ideas.

Temperaments

Travel Guides

- a variety of duties often characterized by frequent change;
- the direction, control, and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions.

Sightseeing and Establishment Guides

- repetitive or short cycle operations carried out according to set procedures or sequences;
- dealing with people in actual job duties beyond giving and receiving instructions.

HOSTESSES AND STEWARDS, EXCEPT FOOD AND BEVERAGE

WORK PERFORMED

This chapter includes occupations concerned with providing recreational and personal services for the comfort, welfare and safety of passengers on board ships, airplanes, trains or buses, and for guests in hotels and resorts. Worker functions include: planning and co-ordinating recreational programs; compiling information on the interests of guests, destinations of passengers and meal and beverage inventories; talking to convey or obtain information; attending to individual needs of passengers; and handling supplies and personal belongings. Work activities include: greeting passengers and guests; assisting passengers to locate seats; demonstrating use of safety equipment; preparing records and reports; serving meals and beverages; checking cabin for general condition and supplies; and performing housekeeping tasks.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

6145-110 SOCIAL DIRECTOR (amuse. & rec.) 3 4

B

GED SVP

6145-114 PURSER (air trans.)

3 3

GED SVP

6145-118 STEWARDESS, AIRLINE (air trans.) 3 3

C

GED SVP

6145-122 STEWARD (water trans.)

2 3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	<u>3</u>	4	4	4	4	4	4	4	4	5							
B	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	<u>3</u>	<u>3</u>	5	L 23456	I 567	3	3	2	598	
C	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	4	5	L 234	I	2	3	13	35	

APTITUDES AND CAPACITIES

Social Directors require:

- learning ability to understand and apply the principles and techniques used in planning and organizing recreational activities and to effectively supervise and co-ordinate programs;
- verbal ability to communicate effectively with people at all levels to promote recreational facilities and services, and to ascertain interests of group.

Pursers and Stewardesses require:

- learning ability to understand and apply the regulations, standards and procedures relating to their in-flight and ground duties;
- verbal ability to communicate effectively when instructing passengers in safety and emergency procedures and in Customs and Immigration regulations, and when answering queries regarding transportation connections and schedules;
- clerical perception to prepare accurate enroute reports, correctly read schedules and timetables, and observe pertinent detail when verifying boarding passes;

- manual dexterity to move the hands easily and skilfully when reaching for and handling trays, glasses and bottles;
- eye-hand-foot co-ordination to maintain balance during flight while serving passengers;
- agility to stoop, kneel or crouch when assisting handicapped passengers into seats, administering first aid, and tidying the cabin;
- physical ability to stand for extended periods during flight;
- ability to work while exposed to noise from engines and changes in atmospheric pressure.

Stewards require:

- learning ability to understand and follow instructions concerning cleaning services and passenger accommodations on board ship;
- eye-hand-finger co-ordination when making beds and berths, and washing dishes and cleaning cabins;
- manual dexterity to reach for and easily handle luggage and cleaning equipment;
- ability to balance and adapt to motion of ship while performing duties, and to stoop and kneel while cleaning cabins, staterooms and public areas.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- eleven to twelve years of general education;
- three to six months of on-the-job training under guidance of an experienced social director; or
- experience in related jobs such as camp counsellor, playground leader or swimming instructor combined with a short period of on-the-job training.

B

- eleven to twelve years of general education;

C

- up to three months training consisting of courses provided by the airlines and on-the-job experience under guidance of experienced personnel.

- nine years of general education;
- up to three months of on-the-job training under guidance of the chief steward.

Note: Ability to speak at least the two official languages is often requisite for occupations in the travel industry where significant contact with passengers or guests occurs.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Advancement for Social Directors who have the necessary skills, and who obtain further training may be to occupations such as 2333-122 RECREATION LEADER or 2333-110 RECREATION DIRECTOR.

B

Stewardesses who have the necessary experience and initiative may become Pursers. Pursers and Stewardesses with leadership qualities may with further training occupy senior positions such as recruitment representative or 2797-138 INSTRUCTRESS, AIRLINE STEWARDESS.

C

Stewards who have the capacity for more involved tasks may advance to the position of chief steward, cashier or bar steward on board ship.

Transfer

A

Social Directors may transfer to other occupations which involve dealing with the public, such as 3715-130 ATTENDANT, RECREATIONAL FACILITY; 4171-122 INFORMATION CLERK; and 2333-126 CAMP COUNSELLOR.

B

Pursers and Stewardesses may transfer to other divisions of the airline and occupy positions such as 4171-122 INFORMATION CLERK; 4193-114 RESERVATION CLERK or 4193-118 TICKET CLERK. Pursers and Stewardesses may also find similar employment which does not involve additional extensive training in other organizations such as bus companies, shipping or railway lines, hotels and restaurants.

C

Stewards may transfer to occupations requiring similar skills, such as 6133-110 HOUSEMAN; 6135-118 SLEEPING-CAR PORTER or 6139-110 ATTENDANT, LODGING FACILITIES.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Social Directors

Interests

- dealing with people in social situations as in organizing recreational activities helping people to achieve fulfilment and rewarding enjoyment by means of creative and satisfying leisure-time activities;
- business contact with people.

Temperaments

- the direction, control and planning of the recreational activities of others;
- the evaluation of information based on judgmental criteria, as in deciding on form of recreational activity, based on interests of group and availability of equipment and facilities;
- dealing with people in actual job duties beyond giving and receiving instructions;
- a variety of duties often characterized by frequent change.

Pursers and Stewardesses

Interests

- business contact with people.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions;
- evaluation of information against judgmental criteria such as determining measures to be taken during emergency;
- performing adequately under stress when confronted with the unexpected or critical.

Stewards

Interests

- dealing with things and objects;
- routine, concrete and organized work related to housekeeping chores.

Temperaments

- doing things only under specific instruction of chief steward or on request of passenger, allowing little room for independent action or judgment;
- dealing with people in actual job duties beyond giving and receiving instructions.

OTHER REQUIREMENTS

- a capacity to constantly adapt to meet the needs and interests of passengers or guests;
- poise, tact, diplomacy, good grooming and congenial personality are other desirable qualities for a Purser or Stewardess.

BABYSITTERS

WORK PERFORMED

This chapter includes occupations concerned with caring for children in private residences, during the temporary absence of parents or guardians. Worker functions include: attending to the personal needs of children; and performing some domestic housekeeping duties. Work activities include: preparing meals; reading stories; playing games with children; feeding, bathing and dressing children; and laundering clothes.

LIST OF OCCUPATIONAL TITLES

GED SVP

6147-110 BABYSITTER (pers. serv., n.e.c.) 3 3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>4</u>	<u>4</u>	4	4	4	5	<u>4</u>	4	4	5	4		L 3456	I	3	3	41	53

APTITUDES AND CAPACITIES

Babysitters require:

- learning ability to acquire and apply knowledge of child care;
- verbal ability to comprehend and follow parents' instructions and to communicate effectively with children;

- eye-hand-finger co-ordination when preparing meals, dressing children, pressing garments and feeding babies;
- capacity to stoop, kneel, crouch and extend the arms to pick up babies and to tidy up and clean home.

TRAINING AND ENTRY REQUIREMENTS

Babysitters normally require:

- one to three months experience usually obtained by caring for members of their own family.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Babysitters may advance to occupations in Chapter 3135, NURSING AIDES AND ORDERLIES; if they have the necessary educational background and obtain specialized training.

Transfer

Babysitters who are interested in caring for children or attending elderly or confined adults may transfer to other occupations such as 6149-118 FOSTER MOTHER, 6149-130 CHILD-CARE ATTENDANT, and 6149-134 COMPANION.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of Babysitter require significant interests in, and dispositions for work involving the following:

Interests

- working for people for their presumed good in executing social and domestic responsibilities;
- dealing with things and objects such as foodstuffs, laundry, utensils and cleaning equipment.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions, as in communicating with and taking care of children;
- doing things only under specific instruction, allowing little or no room for independent action of judgment in working out job problems.

OTHER REQUIREMENTS

Patience, emotional maturity, integrity, trustworthiness and ability to work without supervision are other desirable qualities for babysitters.

PERSONAL SERVICE OCCUPATIONS, N.E.C.

This group includes personal service occupations, not elsewhere classified, concerned with duties such as housekeeping, attending to personal needs of employer, acting as companion, attending locker rooms, ushering, massaging and performing other related duties.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
6149-110	PERSONAL SERVANT (pers. serv., n.e.c.)	3	4	4	4	4	4	<u>4</u>	4	<u>3</u>	4	4	L 456	I	3	3	3	59
6149-114	MAID, DOMESTIC (pers. serv., n.e.c.)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	4	4	L 34	I	3	3	3	59
6149-118	FOSTER MOTHER (pers. serv., n.e.c.)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	4	5	L 34	B	3	3	463	795
6149-122	BUTLER (pers. serv., n.e.c.)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	4	4	L 4	I	3	3	3	59
6149-126	TATOO ARTIST (pers. serv., n.e.c.)	4	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>3</u>	S 47	I	2	4	89	XY5
6149-130	CHILD-CARE ATTENDANT (pers. serv., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 34	B	3	3	43	579
6149-134	COMPANION (pers. serv., n.e.c.)	3	<u>3</u>	4	4	4	4	4	4	<u>4</u>	5	5	L 456	I	3	2	43	5
6149-138	MASSEUR (pers. serv., n.e.c.)	4	4	4	4	4	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 4	I	2	3	32	25
6149-142	FARM HOUSEKEEPER (pers. serv., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	M 34	B	2	2	31	23
6149-146	HANDYMAN (pers. serv., n.e.c.)	4	4	4	<u>4</u>	4	5	<u>4</u>	<u>4</u>	<u>3</u>	4	4	M 34	B	2	2	319	23Y
6149-150	LOCKER-ROOM ATTENDANT (pers. serv., n.e.c.)	4	4	4	5	4	4	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	321	23
6149-154	USHER (pers. serv., n.e.c.)	4	4	4	5	<u>4</u>	4	4	4	4	4	5	L 45	B	2	2	23	23
6149-156	CABANA BOY (amuse. & rec.)	4	4	4	5	4	4	<u>4</u>	4	<u>4</u>	4	5	L 3456	O	2	2	321	23

LAUNDERING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with washing and drying garments and textile furnishings in commercial laundry establishments. Worker functions include: computing laundering time-cycles and quantities of washing ingredients according to type and weight of fabric; tending washing, carding, winding and extracting machines; manipulating hand irons; and handling and sorting articles for laundering. Work activities include: shaking, folding and wrapping articles; loading and unloading machines; adding washing ingredients; and adjusting rolls and setting timers.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
6161-110	WASHING-MACHINE TENDER (laund., clean. & press.)	3	4	6161-122	BLANKET FINISHER (laund., clean. & press.; textile)	2	2
6161-114	LAUNDRYMAN (laund., clean. & press.)	2	3	6161-126	CONTINUOUS-TOWEL ROLLER (laund., clean. & press.)	2	2
6161-118	WASHER, HAND (laund., clean. & press.)	2	3	6161-130	EXTRACTOR TENDER (laund., clean. & press.)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	4		M-H 34	I 345	3-2	4-2	319	23Y
		4				<u>3</u>			5								

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to acquire and apply knowledge of fabrics and techniques of laundering;
- eye-hand-co-ordination to make adjustments to machines, and to press articles with hand iron;
- manual dexterity to untie laundry bundles, load and unload machines, carts and baskets, wash and remove soil from fragile articles by hand, and hang articles to dry;

- physical capacity to stand continuously, and sufficient strength to push handtruck, position power hoist, and lift and carry laundry bundles and rolls weighing up to fifty pounds;
- ability to work inside with damp articles in a moisture-saturated atmosphere and in extreme heat during summertime;
- capacity to work while exposed to loud, steady noises from washing, drying and extracting machines;
- ability to stoop is required for 6161-118 WASHER, HAND to hand-laundry fragile articles.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- six to ten years of general education; and
- up to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter with supervisory ability may advance to 6160-114 FOREMAN, LAUNDERING, DRY-CLEANING AND PRESSING OCCUPATIONS. See also Chapter 610, MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS, for qualifications profile. Experienced workers may successfully operate their own laundry service provided they have adequate finances and have acquired a knowledge of business practices.

Transfer

Workers in this chapter may transfer to occupations requiring similar skills in Chapters 6163, DRY CLEANING OCCUPATIONS; 6165, PRESSING OCCUPATIONS; and 6198, OCCUPATIONS IN LAUNDERING AND OTHER ELEMENTAL WORK, SERVICES; or in Group 6169, APPAREL AND FURNISHINGS SERVICE OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete, and organized work;
- dealing with things and objects, such as laundry machinery and laundry articles;
- activities which are non-social and are carried on in relation to laundry processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set laundry procedures;
- doing things only under specific instructions, with little or no room for independent action or judgment in solving laundering problems;
- the precise attainment of set standards.

DRY CLEANING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with cleaning garments, fur and textile furnishings in commercial dry cleaning establishments. Worker functions include: compiling information pertaining to dry cleaning processes; manipulating brushes, sprays and applicators of chemical spot removers; and tending dry cleaning machines and solvent filtering equipment. Work activities include: sorting, examining and weighing articles; loading and unloading cleaning drums; and adjusting machine controls.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
6163-110	DRY CLEANER (laund., clean. & press.)	3	5*	6163-114	FUR CLEANER (laund., clean. & press.)	3	4
				6163-118*	SPOTTER (laund., clean. & press.)	3	4

B

		GED	SVP
6163-122	DRY-CLEANER HELPER (laund., clean. & press.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>		L-M 47	I 457	3	5-4	913	9Y
			5			5				5								
B	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	4		M 47	I 47	2	2	13	23

APTITUDES AND CAPACITIES

- Workers in this chapter require:
 - learning ability to acquire and apply knowledge of fabrics and techniques of dry cleaning and stain removal;
 - eye-hand co-ordination to sort and weigh articles, and make adjustments to machines;
 - manual dexterity to load and unload machines, rub articles with brush or sponge, and use steam gun or air hose to remove stains;
 - strength to lift articles weighing up to fifty pounds;
 - adaptability to hot and humid conditions, to odours and fumes from various cleaning compounds, and to hazardous solvents which may promote skin irritations;
- capacity to work while exposed to constant noise from dry cleaning machines.

Additionally, for workers in Cluster A:

 - form perception to inspect furs and fabrics for damage, and to examine and identify types of stains or defects in textile furnishings;
 - colour discrimination to restore colour to over-bleached or stained areas.

Additionally, for Dry-Cleaner Helpers:

 - eye-hand-foot co-ordination to use handtruck and cart to transport articles.

TRAINING AND ENTRY REQUIREMENTS

- Workers in this chapter normally require:
- A

 - nine or ten years of general education; and completion of
 - a two-year apprenticeship program which may be provincially regulated; or
- B

 - elementary school education;
 - up to thirty days of on-the-job training.
- an occupational training course, plus on-the-job training, lasting up to six months; or
 - four to six months of on-the-job training only.

ADVANCEMENT AND TRANSFER POSSIBILITIES

A**Advancement**

Workers in this cluster who have a sound knowledge of dry-cleaning techniques, and who possess supervisory abilities may advance to appropriate occupations in Volume I, Unit Group 6160, SUPERVISORS, APPAREL AND FURNISHINGS SERVICE OCCUPATIONS. See also Chapter 610, MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS, for qualifications profiles.

Transfer

Workers may transfer between occupations within this cluster or to other occupations requiring similar skills such as 6169-110 DYER.

B**Advancement**

Skilled Dry-Cleaner Helpers may with further training advance to occupations in Cluster A.

Transfer

Dry-Cleaner Helpers may transfer to 6198-138 LAUNDRY LABOURER and to occupations requiring similar skills in Chapters 6161, LAUNDERING OCCUPATIONS; 6165, PRESSING OCCUPATIONS; or in Group 6169, APPAREL AND FURNISHINGS SERVICE OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A**Interests**

- non-social work, carried out in relation to machines and dry cleaning techniques;
- dealing with things and objects, such as garments and textile furnishings;
- activities of a routine, concrete and organized nature.

Temperaments

- the evaluation of information against sensory or judgmental criteria, as in deciding cleaning procedure to be used, according to type and colour of fabric and nature of stain;
- the precise attainment of set limits, tolerances or standards.

B**Interests**

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive operations carried out according to set procedures or sequences, as in moving articles to and from machines, using handtruck;
- doing things only under specific instruction of dry cleaner.

PRESSING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with machine or hand pressing clothing, textile furnishings and similar articles. The primary worker function is manipulating items into position for pressing on padded table, form or ironing board, and operating controls of pressing equipment. Work activities include: hand ironing difficult or delicate pieces; measuring dimensions of garments and textile furnishings; and examining, folding, stacking or hanging articles after pressing.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
6165-110	BLOCKER (knit goods; laund., clean. & press.)	2	3	6165-122	PRESSER, HAND (garment & fabric; laund., clean. & press.)	2	2
6165-114	SILK FINISHER (laund., clean. & press.)	2	3	6165-126	PRESSER, MACHINE (garment & fabric; laund., clean. & press.)	2	2
6165-118	GLOVE FINISHER (garment & fabric; laund., clean. & press.)	2	2	6165-130	STRETCHER-DRIER (laund., clean. & press.)	2	2
				6165-134	FLATWORK FINISHER (garment & fabric; laund., clean. & press.)	2	2

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	4	4	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I 456	2	3-2	319	23Y
		5		<u>3</u>	5	<u>4</u>	<u>4</u>		<u>4</u>	4						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand instructions and follow directions for machine or hand-pressing work, and to become familiar with qualities of fabrics;
- form perception to correctly position and shape garments and textile furnishings on pressing equipment, and to observe irregularities when inspecting garment after pressing;
- eye-hand-finger co-ordination and manual dexterity to operate pressing machines, manipulate hand-irons, and handle garments, flatwork and other articles;

- finger dexterity to manipulate small objects and materials when blocking and pressing garments, attaching household articles to stretchers, and feeding flatwork into pressing machines;
- eye-hand-foot co-ordination to work with machines having hand and foot controls;
- physical capacity to perform work while constantly standing;
- visual acuity to avoid scorching, and to ensure smooth finish and satisfactory appearance of finished articles;
- capacity to work in hot humid conditions, in proximity to loud noises from pressing machines, and when exposed to physical hazards such as burns from hot equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- elementary school education;
- up to three months of on-the-job training depending on previous experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this cluster who demonstrate skill and ability may, with further training, advance to occupations such as 6163-110 DRY CLEANER or 6163-118 SPOTTER. Those who have supervisory ability may advance to appropriate occupations in Volume I, Unit Group 6160, SUPERVISORS, APPAREL AND FURNISHINGS SERVICE OCCUPATIONS. See also Chapter 610, MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS, for qualifications profiles. Experienced workers with financial backing may operate their own pressing or dry-cleaning shop, provided they have knowledge of business practices.

Transfer

Workers in this chapter may transfer to occupations requiring similar skills and training found in Chapter 6161, LAUNDERING OCCUPATIONS; and Group 6169, APPAREL AND FURNISHINGS SERVICE OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work as in operating pressing machines;
- dealing with things and objects, such as pressing machines, hand irons, garments, textile furnishings and similar articles;
- performing duties which are non-social in nature and are carried on in relation to machines, appliances, and pressing techniques.

Temperaments

- repetitive operations carried out according to set procedures or sequences such as shaping, pinning, blocking, measuring and folding garments;
- doing things only under specific instruction allowing little room for independent action or judgment;
- the precise attainment of set limits, tolerances or standards.

APPAREL AND FURNISHINGS SERVICE OCCUPATIONS, N.E.C.

This group includes service occupations, not elsewhere classified, concerned with activities such as dyeing clothing and household furnishings, cleaning rugs and carpets, and tending machines that patch sheets and other articles, or fold shirts, or dry and untangle flat work preparatory to ironing.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS															
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E						
6169-110	DYER (laund., clean. & press.)	<u>3</u>	4	3	4	<u>3</u>	4	4	4	<u>3</u>	5	<u>2</u>	M 47	I 3457 3	6	91	0Y9
6169-114	RUG CLEANER (laund., clean. & press.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	H 347	I 4	3	4	931 0Y
6169-118	RUG CLEANER, MACHINE (laund., clean. & press.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	<u>4</u>	H 47	I 57	3	4	931 0Y
6169-122	HATTER (laund., clean. & press.)	4	4	4	<u>3</u>	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	4	L 4	I 47	2	4	139 0Y2
6169-126	SPRAYER, LEATHER (laund., clean. & press.)	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	<u>3</u>	L 4	I 7	2	4	139 20Y
6169-130	FUR-STORAGE MAN (laund., clean. & press.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	4	M 4	I	2	4	31 23Y
6169-134	CLEANER AND PRESSER (laund., clean. & press.)	4	4	5	4	<u>3</u>	5	<u>3</u>	4	<u>3</u>	4	4	M 4	I 7	2	3	31 2Y
6169-138	STARCHER (garment & fabric; laund., clean. & press.)	4	4	4	4	4	5	<u>4</u>	4	<u>3</u>	5	5	L 4	I 46	2	3	139 2Y
6169-142	MARKER (laund., clean. & press.)	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	M 34	I 45	2	3	31 23Y
6169-146	DYER HELPER (laund., clean. & press.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	4	M 4	I 3456	2	3	31 23
6169-148	MINOR-REPAIR GIRL (garment & fabric; laund., clean. & press.)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	4	S 47	I	2	2	13 2Y
6169-150	PATCHER (garment & fabric; laund., clean. & press.)	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	3	L 4	I 56	2	2	139 2Y
6169-154	SHIRT FOLDER (garment & fabric; laund., clean. & press.)	4	4	5	4	4	5	<u>3</u>	<u>4</u>	<u>4</u>	<u>3</u>	5	L 4	I	2	2	139 23Y
6169-158	TUMBLER TENDER (laund., clean. & press.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I 345	2	2	319 23
6169-162	FOLDING-MACHINE FEEDER (laund., clean. & press.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	4	L 4	I 5	2	2	319 23
6169-166	CHECKER (laund., clean. & press.)	4	4	4	4	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	31 23

JANITORS, CHARWORKERS AND CLEANERS

WORK PERFORMED

This chapter includes occupations concerned with cleaning building interiors, furnishings and equipment, and performing minor maintenance duties. Worker functions include: manipulating cleaning implements, and operating polishers and other powered equipment; and handling dusters, cleaning materials and supplies. Work activities include: sweeping, mopping and waxing floors; vacuuming rugs and carpets; cleaning ceilings, walls, fixtures and trim; polishing furniture; cleaning windows, washrooms and venetian blinds; doing minor painting and carpentry or other maintenance work; emptying trash receptacles; clearing sidewalks and driveways; and gardening.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
6191-110	JANITOR (any ind.)	2	2	6191-120	VENETIAN-BLIND CLEANER AND REPAIRER (misc. serv.)	1	2
6191-114	CHARWOMAN (any ind.)	1	2				
6191-118	CLEANER, INDUSTRIAL PLANT (any ind.)	1	2	6191-122	WINDOW CLEANER (misc. serv.)	1	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	5	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M-H 34	I-B	2-1	2		31	23
		4		<u>3</u>	4	<u>4</u>			<u>3</u>								

APTITUDES AND CAPACITIES

Janitors, Charworkers and Cleaners require:

- learning ability to understand and follow simple instructions;
- form perception to inspect surfaces and objects for dust, dirt and grease;
- eye-hand co-ordination to operate a variety of cleaning equipment and to perform minor repairs;
- finger dexterity to work with cleaning work aids and small hand tools;

- manual dexterity to clean, dust and polish;
- strength to lift objects such as furniture and equipment weighing up to fifty pounds;
- agility to work in awkward positions such as stooping, kneeling, crouching and reaching to apply cleaning solutions, and to make repairs, and work in garden;
- eye-hand-foot co-ordination for 6191-110 JANITOR and 6191-122 WINDOW CLEANER to balance on ladder while cleaning walls, ceilings and windows.

TRAINING AND ENTRY REQUIREMENTS

Janitors, Charworkers and Cleaners normally require:

- six or fewer years of general education;
- up to four weeks of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter with supervisory ability may advance to 6190-110 FOREMAN, JANITORS, CHARWORKERS AND CLEANERS. See also chapter 610, MANAGING SUPERVISORS AND SUPERVISORS, SERVICE OCCUPATIONS, for qualifications profile. Advancement may also be to 8799-194 MAINTENANCE MAN, BUILDING for those janitors who are skilled and able to assume more responsibilities.

Transfer

Transfer may be to other occupations within this chapter or to 6149-146 HANDYMAN, and to appropriate occupations in Group 6199, OTHER SERVICE OCCUPATIONS, N.E.C. for individuals with the necessary qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- dealing with things and objects, such as cleaning and polishing equipment, and small hand tools.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

Additionally, for 6191-122 WINDOW CLEANER:

- taking risks when balancing on swing stage or scaffolding to wash exterior windows.

ELEVATOR-OPERATING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with transporting passengers and freight between floors by means of elevators. Worker functions include: speaking to passengers to give information; and operating elevators by pressing buttons or moving levers. Work activities include: assisting passengers on and off cars; indicating location of elevator and directing passengers; and opening and closing elevators doors and safety gates.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
6193-110	ELEVATOR OPERATOR (any ind.)	2	2	6193-114	ELEVATOR STARTER (any ind.)	2	2

QUALIFICATIONS PROFILE

Aptitudes													PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C								
4	<u>4</u>	4	<u>4</u>	4	5	<u>3</u>	4	<u>4</u>	5	5			M 46	I	2	2	23	23
						4	5											

APTITUDES AND CAPACITIES

Elevator Operators and Elevator Starters require:

- learning ability to understand and apply instructions for operating elevators;
- verbal ability to communicate with passengers, to comprehend their requests and to provide information and directions clearly;

- spatial perception to visualize the movement of elevator to ensure that it stops level with each floor;
- eye-hand co-ordination and manual dexterity to control the movement and accurately stop elevators;
- capacity to work in small, confined area and stand for extended periods.

TRAINING AND ENTRY REQUIREMENTS

Elevator Operators and Elevator Starters normally require:

- six to eight years of general education;
- up to one month of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter with supervisory ability may advance to appropriate occupations in Volume I, 6190-199 MISCELLANEOUS SUPERVISORS, OTHER SERVICE OCCUPATIONS.

Transfer

Transfers are usually between the two occupations in this chapter. Transfer to other service occupations such as 6135-114 BELLMAN or 6198-114 CHECKROOM ATTENDANT is also possible.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- contact with people to give directions and information;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences such as transporting people or materials between floors of stores, offices or apartment buildings;
- doing things only under specific instruction requiring little or no independent action or judgment.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, SERVICES

WORK PERFORMED

This chapter includes labouring and other elemental work occupations, primarily found in service establishments. Worker functions include: handling objects and materials, requiring the use of body members and hand tools to perform essentially manual work; and attending to the personal needs or requests of others. Work activities include: serving clients in checkrooms or shower rooms; shining shoes; replenishing food and beverage supplies at bars; carrying dishes and other supplies to and from dining rooms; washing dishes, shaking out and folding laundered articles; maintaining supplies in a beauty salon; and opening doors for patrons of hotels or other establishments.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
6198-110	BOOTBLACK (pers. serv., n.e.c.)	1	2	6198-142	SUPPLY GIRL, BEAUTY SALON (pers. serv., n.e.c.)	1	2
6198-114	CHECKROOM ATTENDANT (pers. serv., n.e.c.)	1	2	6198-144	TANK CLEANER (any ind.)	1	2
6198-118	BAR BOY (cater. & lodg.)	1	2	6198-146	ATTENDANT, HOT-ROOM (pers. serv., n.e.c.)	1	2
6198-122	BUS BOY (cater. & lodg.)	1	2	6198-150	DOORMAN (pers. serv., n.e.c.)	1	2
6198-126	CLEANER, VEHICLE (any ind.)	1	2	6198-154	FEATHER RENOVATOR (laund., clean. & press.)	1	2
6198-130	FREIGHT-CAR CLEANER (rail trans.)	1	2	6198-158	FOLDER, LAUNDRY (laund., clean. & press.)	1	2
6198-134	KITCHEN HELPER (cater. & lodg.)	1	2	6198-162	SHAKER, LAUNDRY (laund., clean. & press.)	1	2
6198-138	LAUNDRY LABOURER (laund., clean. & press.)	1	2				

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L-M 34	I 4	1	2	13	23	
	5	4	5		4			<u>4</u>	4								

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply simple instructions;
- form perception to sort items, and to inspect them for defects or improper finish;
- eye-hand-finger co-ordination and manual dexterity to easily and

skilfully handle goods, process garments and materials, and work with cleaning utensils and tools;

- physical capacity to perform work requiring continuous reaching, handling and fingering of objects and materials, and frequent stooping or kneeling to perform cleaning duties;
- adaptability to moisture and high humidity conditions for workers in laundries and kitchens.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specific educational level;
- from a short demonstration up to thirty days of on-the-job familiarization;
- for 6198-126 CLEANER, VEHICLE a chauffeur's licence.

ADVANCEMENT AND TRANSFER POSSIBILITIES

These occupations are considered entry jobs, and transfer and advancement is to more highly skilled occupations for workers who demonstrate ability, interest and initiative.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- work which is routine, concrete and organized;
- activities which deal with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- performance of duties under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

OTHER SERVICE OCCUPATIONS, N.E.C.

This group includes other occupations, not elsewhere classified, concerned with providing services, such as diving to perform underwater jobs, examining and fumigating buildings to destroy pests, operating crematoria, attending parking lots, taking admission tickets, cleaning public washrooms, caring for church buildings and furnishings, and cleaning laboratory equipment.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS													
		Aptitudes										PA	EC	GED	SVP
		G	V	N	S	P	Q	K	F	M	E	C			
6199-110	DIVER (any ind.)	<u>3</u>	3	4	<u>3</u>	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	H 234567	O	3
6199-114	EXTERMINATOR (misc. serv.)	3	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 34	B 7	3
6199-116	DIVER HELPER (any ind.)	3	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>4</u>	3	5	H 234567	O	3
6199-118	CREMATOR (pers. serv., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	H 4	I 7	3
6199-122	PARKING-LOT ATTENDANT (motor trans.)	4	4	<u>4</u>	4	4	<u>4</u>	4	4	4	5	5	L 4	B	2
6199-126	CLEANER, LABORATORY EQUIPMENT (misc. serv.)	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	4	L 4	I	2
6199-130	SANITATION SERVICEMAN (misc. serv.)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 34	I	2
6199-134	SEXTON (misc. serv.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 34	B	2
6199-138	TICKET TAKER (amuse. & rec.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	4	5	4	L 45	I	2

FARMERS

WORK PERFORMED

This chapter includes occupations concerned with operating general or specialized farms on an ownership, rental or other contract basis to produce a variety of agricultural, horticultural and animal-husbandry products, or to produce a particular product. Worker functions include: determining kind and amounts of crops to be grown or livestock to be raised, and planning and co-ordinating farm activities; supervising farm workers in preparation of land, planting and harvesting crops, and breedings and care of livestock; and driving and operating farm machinery. Work activities include: maintaining farm buildings and equipment; purchasing farm supplies and machinery; hiring and training workers; immunizing livestock and poultry against disease; treating sickness and injuries; marketing farm produce, and keeping records of production, operating costs and other farm data.

LIST OF OCCUPATIONAL TITLES

			GED	SVP				GED	SVP
<i>General Farmers</i>					7113-142	FEEDLOT FINISHER (agric.)		4	7
					7113-146	FARMER, FUR (agric.)		4	6
7111-110	FARMER, GENERAL (agric.)		4	7	<i>Crop Farmers</i>				
<i>Animal Farmers</i>					7115-110	FARMER, FRUIT (agric.)		4	8
7113-110	APIARIST (agric.)		4	7	7115-114	FARMER, TOBACCO (agric.)		4	8
7113-114	BREEDER, HORSE (agric.)		4	7	7115-118	GROWER, MUSHROOM (agric.)		4	7
7113-118	FARMER, POULTRY, EGG PRODUCTION (agric.)		4	7	7115-122	FARMER, GRAIN (agric.)		4	7
7113-122	FARMER, POULTRY, MEAT PRODUCTION (agric.)		4	7	7115-126	FARMER, NURSERY (agric.)		4	7
7113-126	FARMER, BEEF CATTLE (agric.)		4	7	7115-130	FARMER, POTATO (agric.)		4	7
7113-130	FARMER, DAIRY (agric.)		4	7	7115-134	FARMER, SOD (agric.)		4	7
7113-134	FARMER, HOG (agric.)		4	7	7115-138	FARMER, VEGETABLE (agric.)		4	7
7113-138	FARMER, SHEEP (agric.)		4	7	7115-142	GROWER, FLOWER (agric.)		4	7
					7115-146	GROWER, HOP (agric.)		4	7
					7115-150	GROWER, SEED (agric.)		4	7

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	3	3	<u>3</u>	3	3	<u>3</u>	4	<u>3</u>	<u>3</u>	4	M-H 347	B 67	4	8-6	1097	41095
							3		4	3						

APTITUDES AND CAPACITIES

Farmers require:

- learning ability to understand the principles and apply the techniques of farming to achieve productive and profitable farming operations;
- spatial perception to operate farm vehicles, plan layout of crops, and repair farm machinery;
- eye-hand-co-ordination and manual dexterity to use hand tools and sprayers, sort produce, and repair farm equipment and buildings;

- eye-hand-foot co-ordination to actuate levers, pedals and controls to drive and operate farm machinery;
- strength to perform medium to heavy work requiring frequent lifting of objects weighing up to fifty pounds;
- capacity to work in crouching, stooping and kneeling positions, for example when transplanting seedlings, picking vegetables or examining animals.

TRAINING AND ENTRY REQUIREMENTS

- Workers in this chapter normally require:
 - ten to twelve years of general education;
- two years or more in an agricultural program in a community college or university; or
 - two to six years of on-the-job training, or practical experience gained through farm upbringing.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement	Transfer
Since farmers are usually owner-operators, normal advancement criteria are not applicable, however, advancement may come by enlargement of the establishment or other business arrangement.	Successful and experienced farmers who have managerial and administrative skills and other necessary attributes may transfer to appropriate occupations in Chapter 7131, FARM MANAGEMENT OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests	Temperaments
<ul style="list-style-type: none">— dealing with things and objects;— activities leading to satisfaction from tangible results, as evidenced when crop yields meet expectations;— non-social work carried on in relation to processes, machines, and techniques;— scientific and technical work.	<ul style="list-style-type: none">— the direction, control and planning of an entire activity or the activities of others;— a variety of duties often characterized by frequent change;— the evaluation of information against measurable or verifiable criteria;— the evaluation of information against sensory or judgmental criteria, such as determining when to plant and harvest crops;— dealing with people in actual job duties beyond giving and receiving instructions, such as negotiating sale of farm products and supervising experienced farm workers.

BREEDERS, SMALL DOMESTIC ANIMALS**WORK PERFORMED**

This chapter includes occupations concerned with raising dogs and cats for breeding stock or pets, and rabbits for sale of meat. Worker functions include; determining kind and number of animals to be raised, and co-ordinating purchasing, marketing and other activities; attending to the needs of animals; and supervising workers. Work activities include: feeding, watering and grooming animals; cleaning and disinfecting enclosures; providing medications; supplying suitable housing for mothers and young; treating animals to control insect pests; and recording breeding data.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7113-150	BREEDER, DOG (agric.)	3	6	7113-154	BREEDER, CAT (agric.)	3	6
				7113-158	BREEDER, RABBIT (agric.)	3	5

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
3	3	3	4	3	3	3	3	3	5	4	L 347	B	3	6-5	1709	410

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the distinguishing traits, qualities and heredity of small domestic animals, and to apply judgment in their breeding, nutrition and care;

- form perception to examine animals for indications of disease or infestations by animal pests, and to groom animals for show;
- eye-hand-finger co-ordination and manual dexterity to feed, water, wash, clip, groom and otherwise care for animals;
- capacity for stooping and kneeling to feed animals and remove or transfer them between enclosures.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- ten to twelve years of general education;
- one to two years of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Most breeders of small domestic animals, whether full or part-time, are self employed. Therefore advancement is usually a matter of personal choice when deciding on enlargement of business, formation of a partnership or some other business arrangement.

Transfer

Similarly, transfer would normally be limited to changing from one type of animal to another or, perhaps, to an occupation such as manager of a retail pet shop 5130-114 MANAGING SUPERVISOR, RETAIL STORE. See also Chapter 510, MANAGING SUPERVISOR AND SUPERVISORS, SALES OCCUPATIONS, for qualifications profile.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- scientific and technical work;
- activities leading to satisfaction from tangible results, such as seeing desirable characteristics appear as the young mature;
- non-social work that is carried on in relation to processes and techniques.

Temperaments

- the direction, control, and planning of an entire activity;
- a variety of duties often characterized by frequent change;
- the evaluation of information against measurable or verifiable criteria, such as examining and treating animals for pests and diseases.

FARM MANAGEMENT OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with planning, organizing, directing and controlling the operation of farms or farm holdings on behalf of owners. Worker functions include: co-ordinating farm activities; analyzing market conditions and trends; compiling financial and other reports; negotiating or conferring with owner to formulate policies, programs and plans; and supervising activities of foremen and other workers. Work activities include: interviewing and hiring workers; purchasing machinery and supplies; and marketing farm products.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7131-110	MANAGER, FARM (agric.)	4	8	7131-114	MANAGER, HATCHERY (agric.)	4	7
				7131-118	MANAGER, LANDSCAPING (agric.)	4	7

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
2	2	3	4	4	3	4	4	4	5	4		L 5	B	4	8-7	265	45091
			2	3													

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and evaluate market conditions and judgment to make decisions relative to the planning and organizing of farming and business activities;
- verbal ability to communicate effectively with employers, farm workers and customers, orally or in writing, and to understand and use agricultural terminology;

- numerical ability to make computations for cost and production estimates and reports, and for pricing of products;
- spatial perception, for landscaping managers, to prepare proposals containing sketches and layout of grounds;
- clerical perception to prepare detailed reports, and to avoid computational errors when preparing financial and production analyses.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- twelve to thirteen years of general education;
- a two-year diploma program in a college offering courses in agricultural production and management;

- two to four years of related experience at the foreman or assistant manager level.

Farm managers of large multi-unit corporate farms may be required to hold a bachelor's degree in agricultural science plus two to four years of related experience or a significant farming background.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for farm managers is usually dependent on the size of the establishment. Managers of multi-unit corporate farms may be appointed to the board of directors or to an equivalent position in a corporation's head or regional office.

Managers of single unit establishments may advance to more responsible positions in a larger establishment.

Advancement for landscaping managers may be to self-employment depending on their own initiative and drive.

Transfer

Managers employed by large corporations may transfer to positions requiring similar skills within the same establishment. Persons employed in farm management occupations may also transfer to 5131-122 TECHNICAL SALESMAN, AGRICULTURAL EQUIPMENT AND SUPPLIES provided they have the necessary skills.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- business contact with people;
- dealing with people and the communication of ideas;
- work resulting in prestige or the esteem of others.

Temperaments

- the direction, control, and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions, such as negotiating with owners on policies and programs and advising customers;
- the evaluation of information against measurable or verifiable criteria, such as receiving production reports and preparing estimates and forecasts;
- the evaluation of information against sensory or judgmental criteria, such as determining appropriate courses of action without adequate data or precedent;
- a variety of duties often characterized by frequent change.

GENERAL WORKERS, FARM

WORK PERFORMED

This chapter includes occupations concerned with growing field or other crops and raising livestock or poultry on a general farm. Worker functions include: driving and operating farm machinery to plant, cultivate and harvest crops, and operating fixed equipment such as silage cutters, feed mixers, conveyors and stable cleaners; and feeding, watering and attending to the needs of animals and poultry. Work activities include: applying fertilizers and preparing land for sowing; cultivating soil and irrigating growing plants; spraying pesticides and herbicides; harvesting crops; observing stock to detect injuries or disease and providing medications or serums; cleaning and disinfecting barns, animal enclosures and poultry houses; repairing buildings and fences; servicing and repairing farm machinery; and preparing produce for market.

LIST OF OCCUPATIONAL TITLES

GED SVP

7181-110 FARM WORKER, GENERAL (agric.) 3 5

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>4</u>	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	4		M 2347	B 56	3	5	19	1Y

APTITUDES AND CAPACITIES

General farm workers require:

- learning ability to understand the basic principles of agriculture and to use sound practices in growing crops and caring for livestock and poultry;
- spatial perception to operate farm machinery, and for such activities as estimating space requirements for storing grain, silage and hay;
- form perception to visually assess growth and condition of crops, health of livestock, and condition of farm equipment;
- eye-hand-finger co-ordination for activities such as adjusting farm machinery, and for sorting farm produce;
- finger dexterity to treat injuries or inoculate animals, and to pick up and position small parts when repairing machinery;
- manual dexterity to use hand and garden tools and spraying equipment;
- eye-hand-foot co-ordination to simultaneously steer, and actuate levers, pedals and controls of farm machinery;

- strength to perform work involving frequent lifting of objects weighing up to twenty pounds;
- agility to climb ladders and to maintain balance while engaged in activities such as repairing and painting buildings, or picking fruit and pruning fruit trees;
- capacity to work in stooping, kneeling and crouching positions for activities such as servicing machinery, harvesting vegetables and tending milking machines;
- visual acuity to detect plant blight and insect pests, depth perception to judge distances when driving machinery, and colour vision to determine ripeness of grain or fruit;
- capacity to work near or operate noisy machinery;
- capacity to work safely where possibility of injury exists from causes such as falls from ladders or machines, or from accidental contact with cutting mechanisms.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to twelve years of general education;

- on the job training of six months to one year, or practical experience gained during a farm upbringing.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

General farm workers, because of the variety of their duties, may acquire considerable knowledge of a specialized farming activity; consequently, experienced individuals who have supervisory potential may advance to foremen positions in Volume I, Unit Group 7180, FOREMEN: OTHER FARMING, HORTICULTURAL AND ANIMAL-HUSBANDRY OCCUPATIONS; for example, 7180-114 FOREMAN, FIELD CROP AND VEGETABLE WORKERS and 7180-118 FOREMAN, LIVESTOCK WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

General farm workers, because of similarities in work performed, may transfer to some occupations in Minor Group 718/719 OTHER FARMING, HORTICULTURAL AND ANIMAL-HUSBANDRY OCCUPATIONS; for example, 7183-114 FARM WORKER, GRAIN or 7191-110 FARM WORKER, DAIRY.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work carried on in relation to processes, machines and techniques.

Temperaments

- a variety of duties often characterized by frequent change;
- the precise attainment of set limits, tolerances or standards.

FIELD CROP AND VEGETABLE GROWING WORKERS

WORK PERFORMED

This chapter includes occupations concerned with growing field and vegetable crops such as grain, tobacco, carrots and onions. Worker functions include: driving and operating tractors and farm machinery; handling seed, fertilizer and farm produce; examining growing crops for disease, weeds, moisture and maturity, and comparing produce to specified standards to determine grade or quality. Work activities include: planting seeds in greenhouses and transplanting seedlings; mixing and spraying herbicide solutions; thinning row crops; irrigating land; preparing produce for market by bagging, boxing and bunching; and servicing farm machinery.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7183-110	TOBACCO CURER (agric.)	3	6*	7183-122	FARM WORKER, VEGETABLE (agric.)	2	5
7183-114	FARM WORKER, GRAIN (agric.)	2	5				
7183-118	FARM WORKER, MUSHROOM (agric.)	2	5	7183-126	FARM WORKER, TOBACCO (agric.)	2	5

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>4</u>	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	<u>3</u>	4	M-H 347	O-B 37	3-2	6-5	91	Y1
			<u>3</u>		4			<u>4</u>	5	3						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply instructions relating to the planting, cultivating and harvesting of crops, and to the care and servicing of farm machinery;
- spatial perception to judge distances and relative positions when operating mobile farm machinery, and to visualize storage space requirements for farm produce;
- form perception to sort and package produce and to detect bruises or decayed spots, or to assess moisture content of tobacco leaves by observation during curing;
- eye-hand-finger co-ordination and manual dexterity, for example, to repair farm equipment, buildings, and fences, to use garden tools, to prune plants, and to transplant seedlings by hand;
- eye-hand-foot co-ordination to actuate levers, pedals and hydraulic controls of machines such as potato pickers and combines;

- strength to perform medium to heavy work involving frequent lifting of objects such as bagged or crated produce that weigh up to fifty pounds;
- capacity to work in stooping, kneeling and crouching positions when picking vegetables and transplanting seedlings;
- near visual acuity when picking, cutting and sorting produce;
- colour vision to assess ripeness of grain or vegetable crops;
- for tobacco curers and mushroom farm workers, capacity to work in buildings where temperatures are above normal;
- for mushroom farm workers, adaptability to work locations where relative humidity is sufficiently high to cause marked discomfort;
- capacity to work while exposed to disagreeable fumes and odours from sprays or compost fermentation, and dust such as that from threshing machines and combines, or chemicals used for crop dusting that sometimes require use of protective devices.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;
- for 7183-110 TOBACCO CURER, up to two years of on-the-job training;
- for the remaining occupations, six months to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers may advance to lead hand status, especially during harvest season when they may be required to train seasonal workers. Tobacco workers who have the necessary qualifications may advance to 7183-110 TOBACCO CURER. Advancement for workers with supervisory ability may be to 7180-114 FOREMAN, FIELD CROP AND VEGETABLE WORKERS. Since raising crops is an important activity on some dairy farms, advancement to 7180-110 FOREMAN, DAIRY-FARM WORKERS is also possible. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Since raising field crops is an important activity in several farming specialties, transfers are possible to some occupations in Chapters 7181, GENERAL WORKERS, FARM; 7187, LIVESTOCK WORKERS; 7191, DAIRY WORKERS, FARM; and 7197, FARM MACHINERY OPERATORS AND CUSTOM OPERATORS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social activities, carried on in relation to farming processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the precise attainment of set limits, or standards when operating farm machinery, and planting, cultivating and harvesting crops;
- a variety of farming duties often characterized by frequent change.

ORCHARD, VINEYARD AND RELATED TREE AND SHRUB CROP WORKERS

WORK PERFORMED

This chapter includes occupations concerned with growing tree, vine, shrub and ground fruit crops, such as apples, grapes, raspberries and strawberries. Worker functions include: driving and operating farm machinery and equipment to cultivate soil, spread fertilizers, spray pesticides and irrigate fruit crops; comparing condition and growth of trees, plants and fruit for normal development; and handling fruit produce during picking, sorting, grading and packaging processes. Work activities include: planting and pruning fruit trees, vines, cuttings and plants; erecting wooden supports and stringing wires for vines; protecting trees and shrubs against damage from weather and pests; and servicing farm equipment.

LIST OF OCCUPATIONAL TITLES

GED SVP

7185-110 FARM WORKER, FRUIT (agric.) 2 5

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>4</u>	4	4	3	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	3		M 2347	B 567	2	5	19	1Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply the techniques of caring for fruit trees and growing and harvesting fruit crops, and the ability to follow detailed work instructions;
- form perception to examine trees, vines and shrubs for symptoms of disease or the presence of insect pests, and to grade or sort fruit;
- eye-hand-finger co-ordination and manual dexterity when using garden tools and hand chemical sprayers, when thinning fruit and pruning trees or plants, and when harvesting, sorting and packing fruit or berries;
- finger dexterity to harvest, sort and pack fruit and berries without bruising them;
- eye-hand-foot co-ordination to steer and simultaneously actuate levers, pedals, and hydraulic controls of tractors;
- capacity to perform work involving frequent lifting of objects weighing up to twenty pounds;

- agility to climb ladders and balance on platforms or on ladder rungs while picking fruit or pruning fruit trees;
- capacity to work in stooping, kneeling and crouching positions when transplanting and caring for shrubs or vines and when picking berries;
- visual acuity and depth perception to selectively prune branches or shoots;
- colour vision to detect diseased leaves and to determine ripeness of maturing fruit;
- capacity to work on occasion in noisy environment, and to operate farm machinery where vibration and rough rides may cause discomfort and fatigue;
- capacity to work in situations where risk of injury is present, for example, falls from ladders or contact with moving machinery;
- capacity to work with toxic chemicals, sprays, dusts and fumigating mists that may require special precautions in handling.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to twelve years of general education; and
- from six months to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

On small farms that employ from one to three full-time workers, workers may be given lead-hand status during the fruit harvesting season. Experienced fruit-farm workers, who have supervisory potential and are employed by large farms, may advance to 7180-126 FOREMAN: ORCHARD, VINEYARD AND RELATED TREE AND SHRUB-CROP WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other farming and horticultural occupations which require similar skills, such as knowledge of tree pruning and farm machinery operation. See Chapters 7195, NURSERY AND RELATED WORKERS and 7197, FARM MACHINERY OPERATORS AND CUSTOM OPERATORS. Typical occupations are 7195-126 GROUNDSMAN and 7197-118 CROP SPRAYER, MACHINE. Other workers may transfer to 8226-126 GRADER, FRUIT-AND-VEGETABLES.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of fruit-farm worker require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects; and
- basically non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- a variety of duties often characterized by frequent change; and
- the precise attainment of set standards.

HORSEMEN

WORK PERFORMED

This chapter includes occupations concerned with training, exercising and attending to the needs of racehorses and draft horses at a racetrack or on a farm. Worker functions include: training and breaking racehorses and draft horses; analyzing abilities and peculiarities of individual horses, and developing appropriate training programs; manipulating reins, and buckles and straps of bridles, saddles and harnesses during training exercising activities; and handling feed, and grooming and stable equipment. Work activities include: supervising workers who feed and care for horses; accustoming horses to riding equipment or harnesses through progressive stages; riding or driving racehorses to exercise, condition and train them for racing; feeding, watering and grooming horses; cleaning stables; and riding lead ponies to escort horses to starting gate.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
7187-110	TRAINER, RACEHORSE (agric.; amuse. & rec.)	4	6	7187-114	HORSE BREAKER (agric.)	3	7

B

		GED	SVP			GED	SVP
7187-134	EXERCISER, RACEHORSE (agric.; amuse. & rec.)'	2	4*	7187-138	LEAD-PONY BOY (agric.; amuse. & rec.)	2	3
				7187-146	GROOM (agric.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	4	4	4	5	<u>4</u>	4	<u>3</u>	<u>3</u>	5	L-M 4	B 6	4-3	7-6	62	946	
		4								<u>4</u>							968	
B	4	4	4	4	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	L-H 24	B 6	2	4-2	36	3	
			5				<u>3</u>											

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to acquire a knowledge of the behaviour, care and training of horses, to understand the rules and regulations governing horse racing, to apply this knowledge to train horses and be able to discuss training methods, problems and instructions with grooms, jockeys and horse owners;
- eye-hand-finger co-ordination for such typical activities as placing bit in horse's mouth, and bridling animals;
- manual dexterity to saddle horses, or to harness and hitch horses to sulkies;
- eye-hand-foot co-ordination to catch, mount, ride or drive horses during training period;
- strength to perform light to medium work and frequent lifting of objects weighing up to twenty pounds;
- depth perception and field of vision to ride or drive horses;
- adaptability to work situations in which there is risk of injury by

being trampled on or kicked by unruly horses or by falls from horses or sulkies.

B

- learning ability to understand and carry out instructions relating to the exercising, feeding and watering of horses;
- eye-hand-finger co-ordination and manual dexterity to harness and hitch horses to sulkies, saddle horses, administer medications, and use various implements to clean barns and groom animals;
- eye-hand-foot co-ordination and agility to mount and dismount from horses and to maintain balance when riding;
- strength to perform light to heavy work, involving handling horses and frequent lifting of objects weighing up to fifty pounds;
- ability to stoop, kneel and crouch to examine horses' shoes, hooves and legs and apply medications;
- adaptability to work situations in which there is risk of injury by falls from horses, or from kicking.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to eleven years of general education;
- one to four years of on-the-job training;
- completion of licensing or certification requirements.

B

- seven or eight years of general education;
- one to six months of on-the-job training;
- for 7187-134 EXERCISER, RACEHORSE and 7187-138 LEAD-PONY BOY, completion of licensing or certification requirements.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Experienced workers in this cluster who build a reputation may advance to similar positions in larger establishments offering increased remuneration. Those who have knowledge of business practices may become self-employed as 7113-114 BREEDER, HORSE.

B

Occupations in this cluster are considered entry jobs, and advancement is normally to more highly skilled occupations in Cluster A.

Transfer

Because of the specialized nature of the work involved, transfers are usually limited to businesses such as riding schools and stables, circuses, race tracks or horse breeding establishments.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with animals and communicating ideas as in training race horses;
- business contact with people.

Temperaments

- the evaluation of information against sensory or judgmental criteria; for example, assessing and utilizing a horse's abilities through observation and training;
- working alone and being solely responsible for carrying out horse-training program, although this activity is integrated with the work of others such as horse exercisers and grooms.

B

Interests

- routine, concrete and organized work;
- dealing with animals and communicating ideas as reflected in their care and training.

Temperaments

- doing things only under specific instructions, allowing little or no room for independent action or judgment in solving job problems.

LIVESTOCK WORKERS

WORK PERFORMED

This chapter includes occupations concerned with attending to the needs of livestock such as cattle, sheep, hogs and fur-bearing animals. Worker functions include: driving and operating farm machinery to plant, cultivate and harvest crops; manipulating shears, knives, clamps, syringes or tongs when treating or caring for animals; handling tools, implements, bales and sacks; and comparing appearance of animals to assess growth and condition. Work activities include: feeding and watering livestock; applying medications to sick and injured animals; caring for mothers and their young; patrolling cattle or sheep ranch on horseback; repairing farm equipment; killing and skinning fur-bearing animals; and marking animals for identification purposes.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
7187-122	FARM WORKER, HOGS (agric.)	3	5	7187-126	RANCH WORKER (agric.)	3	5
				7187-130	FUR-FARM WORKER (agric.)	3	4

B

		GED	SVP			GED	SVP
7187-136	SHEARER, SHEEP (agric.)	2	3	7187-142	YARDMAN, LIVESTOCK (slaught. & meat pack.; whole. trade)	2	2

N.B. Occupation 7187-118 HORSESHOER (agric.) has been transferred, for Volume II purposes, to Chapter 8339, METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING, N.E.C.

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>4</u>	4	4	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4		M-H 47	B	3	5-4	91	1Y
				4	3			<u>3</u>		4	3							
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5		M 34	B 467	2	3-2	31	32
			5			5	<u>3</u>											

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply the procedures and techniques applicable to growing crops, and feeding and caring for cattle, sheep, hogs or fur-bearing animals;
- spatial perception to operate farm machinery to plant, cultivate and harvest crops;
- eye-hand co-ordination to operate stationary farm equipment, or to use skinning and castrating knives or carpentry tools;
- manual dexterity for activities such as repairing buildings and immunizing animals;
- eye-hand-foot co-ordination when patrolling range on horseback, and to actuate levers, pedals, hydraulic controls and steering mechanisms of farm machinery and trucks;
- finger dexterity to skin animals and to remove flesh from pelt by knife is required by 7187-130 FUR-FARM WORKER;
- capacity to perform medium to heavy work, requiring frequent lifting of objects weighing up to fifty pounds, and capacity for periodically working outdoors in snow and extremely cold weather;

- capacity to work in stooping and crouching positions when treating animals or cleaning pens;
- visual acuity to assess crop growth and condition of animals, and depth perception and field of vision to drive farm machinery;
- colour vision to assess quality of fur pelts is required by 7187-130 FUR-FARM WORKER.

B

- learning ability to understand and follow routine job instructions;
- eye-hand-finger co-ordination and manual dexterity to shear sheep, and tag or mark livestock for identification;
- strength to perform medium work, involving the lifting of objects weighing up to fifty pounds maximum;
- adaptability to work situations in which there is possibility of personal injury from excited animals;
- capacity to work while exposed to unpleasant conditions such as stockyard odours, mud and manure.

Additionally, for 7187-136 SHEARER, SHEEP:

- form perception to avoid cutting or nicking skin when shearing sheep;
- capacity to work in stooping and kneeling positions.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;

- three months to one year of on-the-job training.

B

- six to eight years of general education;
- one week to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement is limited for Livestock Workers in small establishments. Those employed in large establishments, who possess supervisory abilities, may advance to 7180-118 FOREMAN, LIVESTOCK WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Livestock Workers may transfer to other occupations requiring similar skills, for example, 7191-110 FARM WORKER, DAIRY and 7183-114 FARM WORKER, GRAIN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

A**Interests**

- non-social activities, carried on in relations to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- a variety of duties often characterized by frequent change;
- the precise attainment of set limits or standards.

B**Interests**

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems;
- repetitive or short cycle operations carried out according to set procedures or sequences.

DAIRY WORKERS, FARM

WORK PERFORMED

This chapter includes occupations concerned with attending to the needs of cattle on a dairy farm and planting, cultivating and harvesting crops required to feed animals. Worker functions include: driving and operating tractors and other agricultural equipment; tending milking machines; and handling farm tools, supplies and materials. Work activities include: feeding cattle; providing medications to sick and injured animals; spraying cattle to control insect pests; cleaning stables; repairing buildings and fences; mixing and spraying disinfectant and herbicide solutions; milking cows; and washing and sterilizing milking machines and milk containers.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

7191-110 FARM WORKER, DAIRY (agric.) 3 5

B

GED SVP

7191-114 TENDER, MILKING-MACHINE (agric.) 2 2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>4</u>	4	4	<u>3</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	4	H 2347	B 67	3	5	19	1Y	
B	4	4	5	4	4	5	4	4	3	4	5	L 34	I 7	2	2	13	23	

APTITUDES AND CAPACITIES

Dairy-Farm Workers require:

- learning ability to understand and apply dairy farming procedures and techniques to achieve maximum milk production;
- spatial perception to operate motorized-farm equipment to plant, cultivate and harvest crops;
- eye-hand co-ordination and manual and finger dexterity to use brushes, forks and shovels, and to milk cows by hand;
- eye-hand-foot co-ordination to steer and actuate levers, pedals, and hydraulic controls of motorized-farm equipment;
- capacity for heavy work involving frequent lifting of objects weighing up to fifty pounds;
- agility to climb ladders to enter silos and lofts;
- capacity to work in stooping, kneeling and crouching positions to service machinery, and to examine cattle and administer medications;
- near visual acuity to make machine adjustments, far visual acuity to ensure adequate coverage when spraying crops, and depth perception to judge distances when driving farm machinery;

- colour vision to determine ripeness of crops;
- adaptability to working where risk of injury is present from causes such as falls from machines or ladders, or by contact with moving machine gears and chains;
- adaptability to working in dusty locations for example, when threshing grain, or where mists from toxic herbicide sprays may cause discomfort.

Milking-Machine Tenders require:

- learning ability to understand and apply operating instructions for milking machines;
- form perception to detect curdled milk and teat or udder injuries;
- eye-hand-finger co-ordination and manual dexterity to position and remove teat cups, and to dismantle, clean and sterilize milking equipment;
- capacity to work in stooping and kneeling positions to wash cows' udders, and fit and remove milking-machine teat cups.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

For 7191-110 FARM WORKER, DAIRY:

- ten to eleven years of general education;
- a farm upbringing, or from six months to one year of on-the-job training.

For 7191-114 TENDER, MILKING-MACHINE:

- eight to ten years of general education;
- one month of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

On small dairy farms, advancement is usually limited to lead hand status. Experienced Dairy-Farm Workers who are employed by larger establishments and have supervisory potential, may advance to 7180-110 FOREMAN, DAIRY-FARM WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. 7191-114 TENDER, MILKING-MACHINE may, with experience and training, advance to 7191-110 FARM WORKER, DAIRY.

Transfer

Dairy-Farm Workers experienced with farm machinery operation may transfer to related occupations, such as 7181-110 FARM WORKER, GENERAL; 7187-126 RANCH WORKER; and 7197-114 FARM-MACHINERY OPERATOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Dairy-Farm Workers

Interests

- dealing with things and objects;
- non-social activities, carried on in relation to processes, machines and techniques.

Temperaments

- a variety of duties often characterized by frequent change;
- the precise attainment of set limits or standards.

Milking-Machine Tenders

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

POULTRY WORKERS, FARM

WORK PERFORMED

This chapter includes occupations concerned with attending to the needs of poultry and pheasants raised for production of eggs or meat, or for stock. Worker functions include: manipulating shears and clippers to trim wings and toes; and comparing appearance of poultry to assess health, growth and condition. Work activities include: feeding and providing water for fowl; adding vaccines to drinking water; cleaning and disinfecting brooders and poultry houses; placing eggs into incubators; transferring chicks from hatchery to brooders or placing baby chicks into shipping cartons; packaging eggs; killing, plucking and eviscerating fowl; loading poultry produce onto motor vehicles; and transporting mature pheasants to wooded areas and releasing them.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7193-110	FARM WORKER, POULTRY (agric.)	3	4	7193-114	FARM WORKER, PHEASANT (agric.)	2	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>4</u>	4	4	4	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4		M 347	B 7	3-2	4-3	19	1Y
						<u>4</u>											

APTITUDES AND CAPACITIES

Poultry-Farm Workers require:

- learning ability to understand and apply the procedures and techniques of poultry farming;
- form perception for trimming wings and beaks, or segregating poultry by size;
- eye-hand-finger co-ordination and manual dexterity for such activities as killing fowl, packaging day-old chicks, debeaking chicks, and spraying poultry houses;

- finger dexterity for activities such as plucking chickens and placing eggs in incubators;
- sufficient strength to perform medium work, requiring the lifting of objects weighing up to fifty pounds;
- physical capacity to work in stooping, crouching and kneeling positions to clean and disinfect brooders, and clean poultry houses;
- near visual acuity to kill fowl and to debeak chicks;
- capacity to use disinfectants and insecticide sprays, some of which are toxic and require special precautions in their use.

TRAINING AND ENTRY REQUIREMENTS

Poultry-Farm Workers normally require:

- eight to ten years of general education;
- farm upbringing or from one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

On small poultry farms, advancement is usually limited to lead hand status. However, experienced workers who are employed by large establishments, and who possess supervisory ability, may advance to 7180-130 FOREMAN, POULTRY-FARM WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Because of specialized nature of the work, transfer possibilities for Poultry-Farm Workers are limited, however, some workers with additional training may transfer to occupations such as 7181-110 FARM WORKER, GENERAL or 7187-130 FUR-FARM WORKER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social activities, carried on in relation to processes, machines and techniques.

Temperaments

- a variety of duties often characterized by frequent change;
- the precise attainment of set limits or standards.

NURSERY AND RELATED WORKERS

WORK PERFORMED

This chapter includes occupations concerned with growing trees, shrubs and ornamental plants, and providing landscaping, groundskeeping and gardening services. Worker functions include: driving and operating tractors, lawnmowers and other machinery; handling gardening and pruning tools, sprayers, shrubs and sod; examining trees for shape or condition and co-ordinating treatment, pruning or felling activities; supervising workers; and compiling information on park operations. Work activities include: removing dead and diseased trees and damaged limbs; spraying to control insects and plant disease; pruning trees, shrubs and hedges; preparing soil, and planting, cultivating and watering grass, trees, shrubs and flowers; mowing grass and tidying grounds; repairing park benches, fences and buildings; marking lines on sports fields; and gathering evergreen boughs and wild decorative plants for use in floral displays and decorations.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

7195-110 TREE SURGEON (agric.)

4 6

B

GED SVP

7195-114 PARK CARETAKER (gov. serv.)

3 5

C

GED SVP

7195-118 CEMETERY WORKER (agric.)

3 3

7195-122 NURSERY WORKER (agric.)

3 3

7195-126 GROUNDSMAN
(agric.; amuse. & rec.)

2 3

7195-130 GROUNDSMAN, SPORTS FIELD
(agric.; amuse. & rec.)

2 3

7195-134 PARK WORKER

2 2

(agric.; amuse. & rec.)

7195-138 TREE SURGEON HELPER (agric.)

2 2

7195-142 EVERGREENS PICKER
(forest. & log.)

2 2

7195-146 LANDSCAPE WORKER (agric.)

2 2

7195-150 SPRAYER, HAND (agric.)

2 2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4	L 247	O 6	4	6	190	4901	
B	<u>3</u>	<u>3</u>	4	4	3	4	4	4	4	5	5	L 57	B	3	5	12	51	
C	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	<u>3</u>	4	M-H 34	O 6	3-2	3-2	139	2Y	
			5	<u>3</u>						4	5					13	23	

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply tree-surgery practices and techniques and reasoning ability to determine appropriate treatment methods;
- spatial perception to shape trees to desired contour, and to avoid overhead wires and other objects when raising ladders or hydraulic platforms;
- form perception to examine trees and shrubs for disease or defects;
- eye-hand co-ordination and manual dexterity to skilfully use tools and equipment such as chain saws, pruning tools and spray equipment;
- eye-hand-foot co-ordination to actuate levers, hydraulic controls and pedals of hydraulically-operated platforms;
- capacity to climb ladders, and to maintain balance when standing on ladder rungs, hydraulic platforms or tree branches;
- capacity for reaching to prune trees while handling pruning tools and hand or chain saws;
- near visual acuity for examining tree bark and foliage to detect disease and presence of insects;
- capacity to work while exposed to possible injuries from falls off ladders or trees, or from using chain saws.

B

- learning ability to understand, interpret and apply directives concerning use of park facilities;

- verbal ability to adequately answer visitors' queries concerning park facilities, camp sites and camping rates;
- visual acuity, depth perception and field of vision to detect wires and rule infractions when patrolling park grounds.

C

- learning ability to understand and apply practices and techniques associated with the growing of trees, shrubs and plants, or with the provision of landscaping, groundskeeping and gardening services;
- spatial perception to judge distances and relative positions when driving motorized equipment, or to visualize an aesthetic layout of grounds;
- form perception to prune trees, trim hedges or edge lawns;
- eye-hand-finger co-ordination and manual dexterity to use carpentry tools, garden implements and spray equipment;
- eye-hand-foot co-ordination to actuate pedals, levers, and hydraulic controls of equipment such as tractors, backhoes and motor vehicles;
- capacity to perform medium to heavy work involving lifting objects weighing up to one hundred pounds;
- capacity to work in stooping, kneeling and crouching positions to plant flowers, weed flower beds and care for shrubs;
- capacity for reaching and handling to spray trees and shrubs, and to lift and carry trees, shrubs, top soil and flagstones;
- adaptability to working where there is risk of injury from falls, exposure to toxic sprays and contact with moving parts of machines.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- eleven or twelve years of general education;
- one to two years of on-the-job training; or
- one year's experience in arboriculture or a related field, and completion of a course in tree maintenance and protection;
- completion of licensing requirements, where applicable.

B

- nine or ten years of general education;
- six months to one year of on-the-job training.

C

- eight to ten years of general education;
- one week to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

There are no clearly defined advancement patterns for Tree Surgeons, however, those who acquire knowledge of business practices may become self-employed.

B

Park Caretakers with supervisory potential and administrative ability may advance to 1119-238 PARK SUPERINTENDENT, or to appropriate occupations in Volume I, Unit Group 7180 FOREMEN: OTHER FARMING, HORTICULTURAL AND ANIMAL-HUSBANDRY OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

C

Advancement for 7195-134 PARK WORKER may be to 7195-114 PARK CARETAKER; 7195-138 TREE SURGEON HELPER may advance to 7195-110 TREE SURGEON. Workers in this cluster with supervisory ability may advance to appropriate occupations in Volume I, Unit Group 7180 FOREMEN: OTHER FARMING, HORTICULTURAL AND ANIMAL-HUSBANDRY OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

A

Transfer possibilities for Tree Surgeons, because of the high degree of specialization, are limited.

B

Park Caretakers with additional training may transfer to 1119-258 PARK RANGER.

C

Transfer of workers in this cluster is normally to other occupations requiring similar skills within the cluster.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects;
- non-social activities, carried on in relation to processes, machines and techniques;
- activities leading to satisfaction from tangible results, such as improving the appearance of trees by shaping and pruning.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- the evaluation of information against sensory or judgmental criteria, such as assessing a tree's general condition through visual examination;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change.

B

Interests

- dealing with things and objects;
- business contact with people.

Temperaments

- dealing with people in actual job duties beyond giving and receiving instructions, for example, explaining park facilities to campers or seeking their co-operations in observing regulations;
- a variety of duties often characterized by frequent change.

C

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- for the first five occupations in Cluster C, the precise attainment of set limits, tolerances or standards;
- for the remaining occupations, doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

FARM MACHINERY OPERATORS AND CUSTOM OPERATORS

WORK PERFORMED

This chapter includes occupations concerned with operating farm machinery to plant, cultivate and harvest crops. Worker functions include: driving and operating self-propelled or tractor-drawn machines such as seeders, combines, vegetable harvesters, fertilizer spreaders and crop sprayers; operating and controlling stationary harvesting equipment; and comparing spraying and dusting operations to ensure effective application of materials. Work activities include: providing custom operating services under contract; directing activities of machine operators; preparing equipment for operation by setting and adjusting blades, cutter heads, nozzles and other machine components; filling hoppers with seed, fertilizer or chemical dusts; and moving controls to start, stop, regulate or steer equipment.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7197-110	HOP-PICKING-MACHINE OPERATOR (agric.)	4	6	7197-114	FARM-MACHINERY OPERATOR (agric.)	3	5
				7197-118	CROP SPRAYER, MACHINE (agric.)	3	4

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
3	4	4	<u>3</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	4		L-M 247	I-O 67	4-3	6-4	91	Y9
4																	

APTITUDES AND CAPACITIES

- Farm machine operators require:

 - learning ability to acquire a knowledge of the operation and maintenance of farm machinery and equipment;
 - spatial perception to judge distances and relative positions when driving farm machinery, or to visualize relationships of machine parts to facilitate servicing and repair;
 - eye-hand co-ordination and manual dexterity for activities such as hitching machinery to tractors, and cleaning, servicing and repairing equipment;
 - finger dexterity to effect repairs, such as installation of engine breaker points or replacement of chain links;
 - eye-hand-foot co-ordination to drive farm machinery by actuating machine levers, pedals, hydraulic controls and steering mechanisms;
- strength to perform light to medium work involving lifting objects weighing up to fifty pounds;
 - agility to climb steps or ladders attached to machines, and maintain balance while making machine adjustments from step or ladder-rung positions;
 - visual acuity, depth perception and field of vision to make machine repairs and to operate motorized equipment;
 - adaptability to working where risk of injury is present from causes such as falls, overturned vehicles, or contact with cutting mechanisms, drive chains or gears;
 - capacity to work while exposed to engine fumes, dusts or spray mists that can cause discomfort, and may require use of protective equipment.

TRAINING AND ENTRY REQUIREMENTS

- Farm machine operators normally require:

 - ten to twelve years of general education;
- farm upbringing, or from three months to two years of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Farm machine operators with supervisory ability may advance to appropriate occupations in Volume I, Unit Group 7180, FOREMEN: OTHER FARMING, HORTICULTURAL AND ANIMAL-HUSBANDRY OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Transfer may be to other agricultural occupations where ability to operate farm machinery is a significant requirement, such as appropriate occupations in Chapters 7181, GENERAL WORKERS, FARM; 7183, FIELD CROP AND VEGETABLE GROWING WORKERS; 7187B, LIVESTOCK WORKERS; and 7191, DAIRY WORKERS, FARM. Experienced farm machine operators may also transfer to occupations requiring similar skills in mining, construction, transport and material-handling fields, such as 7717-162 PEAT MOSS-GATHERING-MACHINE OPERATOR, 8711-178 POST-HOLE DRILLER, 9179-158 MUSKEG-TRACTOR OPERATOR and 9315-130 TRACTOR OPERATOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- non-social activities, carried on in relation to processes, machines, and techniques;
- dealing with things and objects.

Additionally, for self-employed custom operators:

- business contact with people to solicit contracts.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against sensory or judgmental criteria, for example, assessing dusting and spraying operations to ensure proper application.

Additionally, for self-employed custom operators:

- a variety of duties characterized by frequent change such as hiring workers, obtaining contracts, operating equipment and directing workers;
- the direction, control and planning of an entire activity or activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FARMING, HORTICULTURAL AND ANIMAL HUSBANDRY

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in farming, horticulture and animal husbandry. Worker functions include: attending to the needs of animals and poultry; and handling farm products and agricultural tools. Work activities include: irrigating field crops; thinning and hoeing row crops; feeding livestock and fur bearing animals; cleaning stables and pens; packaging eggs; cleaning and disinfecting poultry houses; collecting maple sap; picking fruit; preparing vegetable produce for market; and performing other routine duties.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7198-110	LABOURER, EGG-GRADING STATION (agric.)	1	2	7198-130	LABOURER, HOP-FARM (agric.)	1	2
7198-114	LABOURER, FRUIT-FARM (agric.)	1	2	7198-134	LABOURER, IRRIGATION (agric.)	1	2
7198-118	LABOURER, DAIRY-FARM (agric.)	1	2	7198-138	LABOURER, LIVESTOCK (agric.)	1	2
7198-122	LABOURER, FIELD AND VEGETABLE CROP (agric.)	1	2	7198-142	LABOURER, POULTRY-FARM (agric.)	1	2
7198-126	LABOURER, GENERAL-FARM (agric.)	1	2	7198-146	LABOURER, SUGAR-BUSH (agric.)	1	2
				7198-150	WORM PICKER (agric.)	1	2

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	5	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M-H 234	O-B	1	2	13	23
	5	4				<u>4</u>	<u>3</u>	<u>4</u>		4						
										3						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand simple instructions and to perform a variety of uncomplicated tasks, usually of a routine nature;
- form perception to check the condition of livestock, thin and weed vegetable crops, and pick properly matured fruit;
- eye-hand-co-ordination and finger dexterity to handle eggs and baby chicks, transplant seedlings, thin row crops, pick berries or prepare produce for market;
- manual dexterity to bag grain, pull vegetables, connect irrigation piping, and pack or crate farm products;

- colour discrimination is especially important for workers who must distinguish colours and shades of ripe and unripe fruit;
- strength to frequently lift and carry agricultural tools, feed for livestock, bags of grain, or containers of farm produce weighing from fifty to one hundred pounds;
- agility to climb ladders and maintain balance while picking tree crops;
- capacity for stooping, crouching and kneeling while caring for livestock, transplanting and weeding row crops, harvesting vegetables or picking berries;
- capacity to work outside under seasonal weather conditions.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- six to eight years of general education;

- a short demonstration up to one month's experience to acquire a job proficiency.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter who have potential may advance to many of the specialized occupations described in Minor Group 718/719 OTHER FARMING, HORTICULTURAL AND ANIMAL-HUSBANDRY OCCUPATIONS.

Transfer

Workers in this chapter may transfer to other occupations in the chapter with short periods of orientation or training.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects, such as agricultural tools and equipment;
- activities of a routine, concrete, organized nature, such as transferring fruit from picking to marketing containers, or transplanting, thinning and hoeing row crops.

Temperaments

- repetitive or short cycle operations carried out according to set procedures, such as emptying egg crates and placing eggs on a conveyor belt, feeding animals, or weeding, hoeing and thinning crops;
- performing duties under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

ANIMAL CARE OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with attending to the needs of animals in a pound, laboratory, kennel, zoo or pet store, and fish or other marine life in an aquarium. Worker functions involve: observing animals and caring for their necessities; manipulating brushes, scrapers, water and steam sprays, vacuum cleaners and siphons to clean cages or aquariums, and brushes, scissors and clippers to groom animals; and handling animals during examination, grooming or treatment. Work activities include: feeding and watering animals; disinfecting cages or aquariums; examining animals for indications of illness, injury or insect pests and treating or reporting conditions; spraying or spreading insecticides; and bathing and grooming animals.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7199-142	ANIMAL ATTENDANT, POUND (agric.)	3	6	7199-154	KENNELMAN (agric.)	2	3
7199-146	AQUARIST (agric.)	3	4	7199-158	ANIMAL ATTENDANT, ZOO (agric.; amuse. & rec.)	2	3
7199-150	ANIMAL ATTENDANT, LABORATORY (agric.)	3	4	7199-162	ATTENDANT, PET SHOP (agric.; ret. trade)	2	3

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
3	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	4	L 47	B 6	3-2	6-3	31	0
4		5	3	<u>3</u>	5				4	5						3

APTITUDES AND CAPACITIES

Animal care workers require:

- learning ability to understand and apply the techniques involved in caring for animals and fish or other marine life, and in maintaining their living areas;
- form perception to examine animals or fish for indications of disease,

injury or infestation, and to remove algae from aquariums, and read temperature or humidity indicators;

- eye-hand-finger co-ordination and manual dexterity to handle animals during washing, grooming, examination and treatment, and to feed animals or fish.

TRAINING AND ENTRY REQUIREMENTS

Animal care workers normally require:

- eight to twelve years of general education;

- thirty days to two years of on-the-job training, depending on the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for experienced workers in this chapter may be to higher skilled occupations within the chapter. With additional training some may advance to 1176-166 INSPECTOR, HUMANE SOCIETY. Others who acquire knowledge of business practices may become self-employed as owner of a pet store.

Transfer

Animal care workers in this chapter may transfer to other occupations within the chapter that require similar skills. With additional training, experienced workers may also transfer to 3159-186 VETERINARY ATTENDANT.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in animal care require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

For Animal Attendant, Pound; Aquarist; Animal Attendant, Laboratory:

- evaluation of information against measurable or verifiable criteria as evidenced by testing water for acidity or oxygen content, determining temperature, and preparing feed, food supplements, vitamins, or special diets for fish or animals.

For Kennelman; Animal Attendant, Zoo; Attendant, Pet Shop:

- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

Additionally, for Animal Attendant, Pound:

- the direction, control and planning of the entire activities of a pound.

OTHER REQUIREMENTS

- a liking for animals and a concern for their welfare.

GROUP 7199B

OTHER FARMING, HORTICULTURAL AND ANIMAL-HUSBANDRY OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities such as: inspecting poultry farms, determining sex of baby chicks, inspecting and grading eggs, sorting and packing agricultural produce, collecting and packaging bull semen, artificially inseminating cows, making maple products, pruning trees, irrigating row and field crops, and spraying trees and bushes to control plant-blight.

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES		Aptitudes	PA	EC	GED	SVP	Ints.	Temps.
		G V N S P Q K F M E C						
7199-110	FIELD MAN, POULTRY (agric.)	<u>3</u> 3 4 4 <u>3</u> 4 4 4 <u>4</u> 5 4	L 47	B	4	6	21	0Y5
7199-114	CHICK SEXER (agric.)	4 4 4 4 <u>3</u> 4 <u>3</u> <u>3</u> 4 5 4	L 47	I	3	5	13	2Y
7199-118	EGG CANDLER (agric.)	4 4 4 4 <u>3</u> 4 <u>3</u> <u>4</u> 4 5 4	L 7	I	2	3	13	2Y
7199-122	SORTER AND PACKER, AGRICULTURAL PRODUCE (agric.)	4 4 4 4 <u>4</u> 5 <u>3</u> <u>4</u> <u>3</u> 5 <u>3</u>	L 47	I	2	2	31	23Y
7199-182	MAPLE-SYRUP MAKER (agric.)	3 4 4 4 <u>4</u> 4 <u>4</u> 4 <u>4</u> 5 4	L 347	I 346	3	6	91	0Y
7199-184	ARTIFICIAL-BREEDING WORKER (agric.)	3 4 4 3 <u>3</u> 4 <u>4</u> <u>3</u> <u>4</u> 4 4	L 47	I 6	3	4	91	Y0
7199-186	TREE PRUNER (agric.)	4 4 5 <u>3</u> 3 5 <u>4</u> <u>4</u> <u>3</u> <u>3</u> 5	M 247	O 6	3	4	91	Y0
7199-188	ARTIFICIAL INSEMINATOR (agric.)	4 4 4 3 4 <u>4</u> <u>4</u> 4 <u>4</u> 4 5	M 46	B 67	3	3	139	2Y
7199-190	IRRIGATOR (agric.)	4 4 4 4 4 5 <u>4</u> 4 <u>4</u> 4 5	M 34	O	2	3	139	23Y
7199-194	BLIGHT-CONTROL WORKER (agric.)	4 4 5 4 <u>4</u> 5 <u>4</u> 4 <u>4</u> <u>4</u> 5	H 34	O 67	2	2	319	23Y

CAPTAINS AND OTHER OFFICERS, FISHING VESSELS

WORK PERFORMED

This chapter includes occupations concerned with commanding and operating fishing vessels that search for and catch fish or other marine life. Worker functions include: determining fishing areas and co-ordinating and supervising the activities of crewmen; controlling the course and speed of the vessel; computing positions; and operating navigation aids, electronic equipment and winches. Work activities include: plotting courses; assigning watches to crew; directing crew engaged in catching, cleaning, preserving, stowing and refrigerating aquatic life; and ensuring that the vessel is properly equipped, provisioned and maintained.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7311-110	CAPTAIN, FISHING VESSEL (fishing)	4	7	7311-114	MATE, FISHING VESSEL (fishing)	4	7
				7311-118	BOATSWAIN, FISHING VESSEL (fishing)	3	6

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	3	3	4	M-H 24567	B 4567	4-3	7-6	95	40Y58
		4	3		3	4	3									40Y

APTITUDES AND CAPACITIES

Captains and Other Officers of fishing vessels require:

- learning ability to acquire a knowledge of seamanship, fishing grounds, capabilities of vessel and crew, use of electronic aids such as navigational radar and sonic fish locators, and to apply these skills to co-ordinate activities of crewmen aboard a fishing vessel;
- verbal ability to effectively communicate by radio and to give directions to crew;
- numerical ability to apply mathematics to solve navigational problems, compute crew's salaries and conduct ship's business;
- spatial perception to visualize the position and movement of own vessel in relation to others and to circumvent navigational hazards, especially during foggy or bad weather conditions;
- form perception to distinguish details in navigational aid displays and charts and to determine condition when examining vessels' equipment and fishing gear;
- eye-hand-finger co-ordination to operate navigational instruments and to plot courses on charts;

- finger dexterity to rapidly manipulate knobs and controls to take readings on electronic and mechanical aids-to-navigation to determine position of ship;
- physical capacity and agility to stand for extended periods and maintain balance on a rolling and pitching deck while steering the vessel, plotting courses or supervising deck and wheelhouse activities, and to lift, handle and examine fishing gear weighing up to seventy-five pounds;
- excellent hearing to detect navigational warnings such as bell buoys and fog horns, and to hear broadcast weather and fishing reports;
- visual acuity both near and far, depth perception and colour recognition;
- capacity to work inside and outside while exposed to wet conditions during rough or rainy weather;
- adaptability to work involving exposure to continuous noises from engine, sea and wind, and danger from mechanical hazards such as ropes, cables and winches.

TRAINING AND ENTRY REQUIREMENTS

Captains of fishing vessels one hundred tons gross and over generally require:

- eleven to twelve years of general education;
- twelve months verified experience at sea and be at least twenty-one years of age; and
- pass a Ministry of Transport's examination to receive a Fishing Master's Certificate.

Mates of fishing vessels one hundred tons gross and over generally require:

- eleven to twelve years of general education and be at least eighteen years of age;
- six months verified experience at sea;
- pass a Ministry of Transport's examination to receive a Fishing Mate's Certificate.

Captains and mates of fishing vessels under one hundred tons gross weight require:

- no minimum level of general education is specified;
- several years of experience under guidance of an experienced fisherman.

CHAPTER 7311

Boatswains of fishing vessels generally require:

- six to eight years of general education; and
- one to two years experience as a deck hand and selection by the Master.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Captains may advance to command fishing vessels of greater tonnage. Some captains own and operate their own boats.

Some boat owners may expand their operations and buy more boats, or start into other phases of the industry such as owning and operating a processing plant or a fish-retail outlet on their own pier.

Mates and Boatswains may advance within the requirements set forth in the Training and Entry Requirements section of this chapter.

Transfer

Transfer opportunities may exist to occupations on other types of vessels such as ferry-boats, tugboats and coastal freighters if the necessary qualification requirements are met, see Chapter 9151, DECK OFFICERS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- work of a non-social nature, carried on in relation to processes, machines and techniques;
- work resulting in personal prestige and esteem by others, such as being in complete charge of a vessel or certain fishing operations.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits or tolerances.

Additionally, for 7311-110 CAPTAIN, FISHING VESSEL:

- dealing with people in actual job duties beyond giving and receiving instructions;
- performing adequately under stress when confronted with the critical or unexpected or taking risks.

OTHER REQUIREMENTS

- an understanding of the personality of each member of his crew;
- be skilled in the work of his deck hands.

FISHERMEN: NET, TRAP AND LINE

WORK PERFORMED

This chapter includes occupations concerned with catching fish and gathering shellfish. Worker functions include: determining time, place and patterns for setting fish traps and co-ordinating and supervising activities of workers engaged in setting and emptying trap nets; operating winches, shellfish harvesting equipment and dragging apparatus; manipulating nets, hooks, lines, spears and other fishing gear; and comparing fish and sorting them by type and size. Work activities include: preparing, lowering, and raising nets and fishing lines; setting buoys and anchors; cleaning and stowing fish; inspecting and repairing fishing equipment; and assisting other crewmen in operation and maintenance of vessel.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP
7313-110	TRAP BOSS (fishing)	4	6

B

		GED	SVP
7313-114	SHELLFISH-HARVESTER OPERATOR (fishing)	3	5

C

		GED	SVP			GED	SVP
7313-118	FISHERMAN, PURSE SEINE (fishing)	2	4	7313-138	FISHERMAN, TRAWL NET (fishing)	2	4
7313-122	DECKHAND, FISHING VESSEL (fishing)	2	4	7313-142	FISHERMAN, HOOP NET (fishing)	2	3
7313-126	FISHERMAN, GILL NET (fishing)	2	4	7313-146	FISHERMAN, LINE (fishing)	2	3
7313-130	FISHERMAN, HARPOON (fishing)	2	4	7313-150	FISHERMAN, POT (fishing)	2	3
7313-134	FISHERMAN, TRAP (fishing)	2	4	7313-154	SHELLFISH-BED MAN (fishing)	2	3
				7313-158	SHELLFISH-HARVESTER DECKHAND (fishing)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	<u>3</u>	4	<u>3</u>	4	4	4	4	4	4	4	L 56	O 4	4	6	95	4501	
B	3	4	4	<u>3</u>	<u>3</u>	5	<u>3</u>	4	<u>3</u>	4	5	M 234	O 4	3	5	91	Y0	
C	4	4	4	4	4	5	<u>3</u>	4	<u>3</u>	4	4	H-VH 234	O 46	2	4-3	913	23	
				3	<u>3</u>		<u>4</u>		<u>4</u>		5							

APTITUDES AND CAPACITIES

Workers in this chapter require:

Trap Bosses

- learning ability to understand and apply the techniques for catching fish with trap nets;
- verbal ability to effectively communicate with workers when assigning duties and directing activities;
- spatial perception to visualize patterns in which fish traps are to be set;

- capacity to work outside under wet conditions where inclement weather is frequent.

Shellfish-Harvester Operators

- learning ability to understand and operate hydraulic-shellfish harvesters and to apply the techniques used to harvest shellfish from the sea bottom;
- spatial perception to visualize the characteristics of the sea bottom;

CHAPTER 7313

- form perception to examine contents of dredge to determine depth of cut required to harvest shellfish;
- eye-hand-co-ordination to set-up, operate and adjust harvester;
- manual dexterity to attach hoses and cables to harvester, using hand tools, and to clean and maintain machinery and boat;
- physical capacity to balance and stand on a moving deck, to work at times in a stooped position, to reach and handle controls and tools when operating or repairing equipment and boat, and sufficient strength to do medium work involving lifting equipment weighing up to fifty pounds;
- capacity to work outside under wet conditions where inclement weather is frequent.

- C**
- learning ability to understand and apply the techniques for catching fish or shellfish;
 - form perception to observe defects in nets and other fishing equipment;
 - eye-hand co-ordination and manual dexterity to set or haul and repair nets, traps, pots or lines, to take fish or shellfish from these devices, and to clean, sort, stow and pack catch;
 - physical capability to perform heavy to very heavy work with frequent lifting of gear weighing up to fifty pounds or more;
 - physical capacity to keep balance on rolling boat deck and to work in a stooped position when reaching and hauling in catch;
 - capacity to work outside under conditions where contact with wet gear, fish and inclement weather is frequent.

TRAINING AND ENTRY REQUIREMENTS

Fishermen in this chapter normally require:

- no specific educational requirements;

- upbringing in a fishing family, or three months of on-the-job training under the guidance of an experienced fisherman.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced fishermen may advance to boatswain, or become mate or captain of fishing vessels, provided they acquire the necessary qualifications and skills, see Chapter 7311 CAPTAINS AND OTHER OFFICERS, FISHING VESSELS.

Transfer

Transfer possibilities for fishermen are limited. Some opportunities may exist for transfer, because of their skills in seamanship, to employment on other types of vessels such as ferryboats, tugboats and coastal freighters, see Chapter 9155 DECK CREW, SHIP.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Trap Bosses

Interests

- work which is basically non-social in nature, carried on in relation to processes, machines and techniques;
- personal prestige, such as being in complete charge of fishing vessel and netting operations.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- the dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change.

Shellfish-Harvester Operators

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the precise attainment of set limits or tolerances;
- the evaluation of information against measurable or verifiable criteria.

C

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little room for independent action or judgment in working out job problems.

HUNTING, TRAPPING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with hunting and trapping wild animals for food, pelts or sale, or to exterminate unwanted predators. Worker functions include: comparing animal signs to identify their source and arranging traps, snares and baits according to animal type; and manipulating knives and hand tools when skinning animals and preparing pelts for market. Work activities include: patrolling traplines and removing catch; resetting and relocating traps; skinning animals; and stretching, skiving, curing and sorting pelts.

LIST OF OCCUPATIONAL TITLES

GED SVP

7315-110 TRAPPER (hunt. & trap.)

3 5

QUALIFICATIONS PROFILE

Aptitudes												PC	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
3	4	4	4	3	5	<u>4</u>	<u>4</u>	<u>3</u>	4	4		H 23467	O 467	3	5	19	69Y

APTITUDES AND CAPACITIES

Trappers require:

- learning ability to acquire knowledge of the habits and tracks of wild animals and to understand and apply the techniques for trapping particular species;
- eye-hand-finger co-ordination to set traps, drive a dog sled or powered-snow vehicle, and handle firearms;

- finger dexterity to skin animals and prepare their pelts;
- manual dexterity to set traps and stretch pelts;
- capacity to lift heavy loads such as logs, supplies and pelts;
- acute hearing to detect sounds of wildlife;
- visual acuity both far and near to set traps, to discern wildlife at a distance, and to aim firearms.

TRAINING AND ENTRY REQUIREMENTS

Trappers normally require:

- primary school education, sufficient to communicate and make simple mathematical calculations during business transactions;
- one or more seasons of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced Trappers may increase their earnings by acting as guides for fishing and hunting parties and some of these who have been able to build a reputation may, with some financial backing, become owner-operators of hunting and fishing lodges.

Transfer

Trappers may act as guides for fishing and hunting parties; see 3719-114 HUNTING AND FISHING GUIDE.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of Trapper require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- work carried on in relation to processes and techniques which are non-social in nature.

Temperaments

- working alone and apart in physical isolation from others;
- the evaluation of information against sensory or judgmental criteria when reading signs of wildlife in order to place traps strategically, and when sorting furs;
- the precise attainment of set limits, tolerances or standards when skinning animals and preparing pelts or furs for marketing.

FISHING, HUNTING, TRAPPING AND RELATED OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with fishing, hunting and trapping activities such as planting, cultivating and harvesting oysters, breeding and raising fish, hunting whales and seals, harvesting and gathering seaweed, repairing fish nets, and unloading and readying fishing vessels.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
7319-110	OYSTER GROWER (fishing)	<u>3</u>	3	3	<u>3</u>	3	4	<u>4</u>	4	<u>3</u>	4	4	L 3456	O 4	4	7	9710	94Y1
7319-114	FISH-HATCHERY MAN (fishing)	<u>3</u>	3	3	3	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	3	M 347	B 4	4	7	971	90Y1
7319-118	GUNNER, WHALE (fishing)	4	4	4	<u>2</u>	4	5	<u>4</u>	4	<u>3</u>	<u>3</u>	4	M 2457	O 46	3	6	91	9Y8
7319-122	NET REPAIRMAN (fishing)	4	4	5	<u>3</u>	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	H 347	B	2	5	31	23Y
7319-126	SEAWEED-HARVESTING-MACHINE OPERATOR (fishing)	4	4	5	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	4	M 234	O 4	2	4	319	3Y
7319-130	FLENSER (fishing)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	4	H 234	O 467	2	4	31	23
7319-132	SEA-FARM SHIFTMAN (fishing)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	4	M 34	B 4	2	4	31	3Y
7319-134	SEALER (fishing)	4	4	5	4	4	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 347	O 46	2	2	31	2Y3
7319-138	SEAWEED GATHERER (fishing)	4	5	5	4	4	5	<u>4</u>	4	<u>4</u>	<u>4</u>	4	M 34	O 4	2	2	31	23
7319-142	WHARF WORKER, FISHING (fishing)	4	4	5	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	H 234	B 47	2	2	31	23Y

FORESTRY CONSERVATION OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with conserving forest areas and woodlots and protecting them from fire, disease and other hazards. Worker functions include: compiling forestry information and meteorological data about assigned region; and reporting fires, fire hazard conditions, accidents and other emergencies. Work activities include: patrolling forests; preparing maps showing amounts and condition of timber, new growth, topographical features and other forestry data; visiting camp-sites to insure that campers comply with fire and other regulations; rendering first aid to injured persons; and maintaining surveillance from lookout stations.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

7511-110 FOREST OFFICER (gov. serv.)

4 6

B

GED SVP

7511-114 FIRE LOOKOUT (gov. serv.)

3 4

N.B. Occupations 7511-118 TREE PRUNER (forest. & log.) and 7511-122 FOREST-FIRE FIGHTER (forest. & log.) have been transferred, for Volume II purposes, to Chapter 7518, OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, FORESTRY AND LOGGING.

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	M 24	O 4	4	6	71	6901	
B	<u>3</u>	4	4	4	3	3	4	4	4	3	4	L 24567	I	3	4	91	602	

APTITUDES AND CAPACITIES

Forest Officers require:

- learning ability to understand forestry regulations and practices and to carry out inventories of timber tracts;
- numerical ability to make arithmetic calculations quickly and accurately;
- spatial perception for activities such as mapping topographical features of the forest and appraising timber stands;
- form perception to note details and detect signs of disease in trees;
- clerical perception to record data quickly and accurately, and to avoid errors in arithmetic computations;
- eye-hand-finger co-ordination to set-up and adjust meteorological instruments;
- eye-hand-foot co-ordination for activities such as driving vehicles, riding horses and walking over all types of terrain;
- strength to perform light to medium work frequently involving carrying radio and meteorological equipment weighing from ten to fifty pounds;

- agility to climb and balance when traversing rough terrain;

- near and far visual acuity and depth perception to read maps and recording instruments, and to observe forest fires and judge distances.

Fire Lookouts require:

- learning ability to understand the procedures involved in the observation and reporting of forest fires;
- spatial perception to relate areas under observation to topographical maps;
- clerical perception to accurately maintain records and log books;
- eye-hand-foot co-ordination when climbing and descending stairs or ladders of lookout towers;
- physical capacity to climb and balance on ladders and platforms;
- near-visual acuity to read maps and record instrument readings;
- far-visual acuity and depth perception to judge distances, and to discern distant fires.

TRAINING AND ENTRY REQUIREMENTS

Forest Officers normally require:

- twelve years of general education;
- two years of vocational training in forestry;
- six months on-the-job training; and
- successful completion of a written provincial examination for certification.

A provincial scaler's licence may be required by some provinces.

Fire Lookouts normally require:

- ten to twelve years of general education; and
- a minimum of two months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Forestry conservation workers with supervisory ability may advance to 7510-110 FOREMAN, FORESTRY-CONSERVATION OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles. Fire Lookouts may also advance to 7511-110 FOREST OFFICER, provided they acquire the necessary qualifications.

Transfer

Forest Officers and Fire Lookouts may transfer to occupations in Chapter 7516, LOG INSPECTING, GRADING, SCALING AND RELATED OCCUPATIONS, provided they acquire additional training.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupations in this chapter require significant interests in, and dispositions for work involving the following:

Forest Officers

Interests

- activities of a technical nature as indicated by the use of meteorological instruments;
- dealing with things and objects, such as maps, two-way radios, timber measuring and meteorological instruments.

Temperaments

- working alone and apart in physical isolation from others, although in frequent contact with others by two-way radio or telephone;
- the evaluation of information against sensory or judgmental criteria;
- the evaluation of information against measurable or verifiable criteria to arrive at decisions;
- performing adequately under stress when confronted with critical or unexpected situations;
- a variety of duties often characterized by frequent change.

Fire Lookouts

Interests

- non-social work, carried on in relation to equipment and techniques;
- dealing with things and objects, such as binoculars, maps, sight-rules, radios and telephones.

Temperaments

- working alone and apart in physical isolation from others, although in frequent contact with others by radio or telephone;
- the evaluation of information against measurable or verifiable criteria;
- repetitive operations carried out according to set procedures or sequences;
- performing adequately under stress when confronted with fire or other hazardous situations.

TIMBER CUTTING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with felling trees and cutting them into logs. Worker functions include: comparing characteristics of trees to obtain optimum utilization; manipulating chain saws and axes to fell trees, trim branches, and cut trunks into logs of standard length; and driving and operating machines that fell, de-limb and cut trees into pulpwood logs. Work activities include: moving levers to guide boom, grapples and shears that cut, lift and feed trees into processor; clearing underbrush from work areas; maintaining and sharpening saws; and marking log butts for production records.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

7513-110 TREE-PROCESSOR OPERATOR,
PULPWOOD (forest & log.)

3 5

B

GED SVP

7513-118 FALLER AND BUCKER
(forest. & log.)

2 5

7513-122 LOGGER, ALL-ROUND
(forest & log.)

GED SVP

2 3

N.B. Occupations 7513-114 TIMBER MARKER (forest. & log.) and 7513-126 SWAMPER (forest. & log.) have been transferred, for Volume II purposes, to Chapters, 7516. LOG INSPECTING, GRADING, SCALING AND RELATED OCCUPATIONS, and 7518, OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, FORESTRY AND LOGGING, respectively.

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	<u>3</u>	5	L 47	O 56	3	5	913	2Y8
B	4	4	4	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	5	H 34	O 56	2	5-3	913	2Y8
			5														

APTITUDES AND CAPACITIES

Workers in this chapter require:

Tree-Processor Operators:

- learning ability to understand and apply correct and safe procedures for operating tree-processing machines that harvest trees for pulp-wood;
- spatial perception to visualize amount of area required to manoeuver and operate tree-processing machine with minimum damage to remaining trees;
- form perception to determine correct position for grapple during shearing and cutting operations and to pile or load logs after harvesting;
- eye-hand co-ordination and manual dexterity to operate cutting and lifting controls of tree-processing machine;
- eye-hand-foot co-ordination to operate and drive tree-processing machine;
- capacity to work outside while exposed to loud noises from machinery and extremes in temperature;
- adaptability to working where there is a variety of physical hazards such as proximity to moving machinery and danger from falling trees;
- good vision to operate tree-processing machine.

B

- learning ability to understand and apply correct and safe procedures to fell and cut felled trees into logs by chain saw or other hand tools;
- spatial perception to visualize the area and direction of fall required to avoid injury to other trees or personnel in area;
- eye-hand co-ordination and manual dexterity to undercut and then backcut the tree trunk with chain-saw, and to withdraw the saw at the appropriate moment when the tree begins to fall;
- eye-hand-foot co-ordination to fell trees with a saw, quickly remove the saw from the cut, and move to a position safe from the falling tree;
- capacity to work outside while exposed to loud, intermittent chain-saw noise, and temperature extremes;
- adaptability to working where there is a variety of physical hazards, such as close proximity to moving saw blades and danger from falling trees;
- strength for heavy work involving the use of hand saws and axes, and chain-saws weighing up to forty pounds;
- agility to work in awkward positions, such as kneeling or stooping while using chain-saw or axe to cut trees or limbs and underbrush.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

Tree-Processor Operators

- ten years of general education;
- a four-month vocational course in the operation of heavy logging equipment and six months of on-the-job training; or

B

- eight to ten years of general education;
- a six-week vocational course in basic logging; or
- four months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers with supervisory potential may advance to 7510-126 FOREMAN, TIMBER-CUTTING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some workers in this chapter may transfer to other occupations in Chapter 7517, LOG HOISTING, SORTING, MOVING AND RELATED OCCUPATIONS, that require similar skills.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities that are basically non-social in nature and are carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set standards, as reflected in efficiently cutting trees for maximum yield;
- performing adequately under stress when confronted with the critical or unexpected, such as injury from falling trees or limbs.

LOG INSPECTING, GRADING, SCALING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with surveying timber stands to appraise yields of marketable lumber and to determine method of recovery, estimating marketable content of logs, and inspecting and grading logs for processing as lumber or pulpwood. Worker functions include: analysing data obtained from surveys of timbered areas; compiling reports indicating species, quality and size of trees; computing estimated yield of lumber or pulpwood; comparing logs to grade them according to size, species and condition; and manipulating equipment used to survey timber stands. Work activities include: measuring height and diameter of trees; boring wood samples; preparing maps showing topographic features and location and types of timber; and marking trees for cutting or processing.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

7516-110 **TIMBER CRUISER** (forest. & log.) 5 7

B

GED SVP

GED SVP

7516-118 **LOG SCALER** 3 5
(forest. & log; pulp & paper; sawmill)

7513-114T **TIMBER MARKER** (forest. & log.) 3 5

7516-122 **LOG GRADER** 3 5
(forest. & log.; sawmill)

N.B. Occupation 7516-114 LOGGING-OPERATIONS INSPECTOR (forest. & log.) has been transferred, for Volume II purposes, to Chapter 1176, INSPECTORS AND REGULATORY OFFICERS, NON-GOVERNMENT.

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	3	<u>2</u>	<u>3</u>	3	<u>3</u>	<u>4</u>	4	4	4	4	M 247	O	5	7	91	061	
B	3	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	4	4	4	4	L 2347	O 46	3	5	913	02	
			<u>3</u>	<u>3</u>			3										026	

APTITUDES AND CAPACITIES

Timber Cruisers require:

- learning ability to conduct surveys of forest areas in order to assess conditions for logging, land use and management planning, and to draft accurate topographical maps from survey notes;
- numerical ability to quickly and accurately compute amounts of marketable timber from measurements of trees and logs;
- spatial perception to observe topographical information for use in maps and reports of area cruised;
- clerical perception to record data and prepare reports;
- eye-hand co-ordination to draft maps, measure trees and use surveying instruments;
- strength to perform medium work, to frequently carry instruments weighing up to twenty pounds, and to maintain balance while walking or climbing over rugged terrain;
- far and near visual acuity and good colour vision to distinguish

distant topographical features and to measure trees and ascertain their species.

Workers in Cluster B require:

- learning ability to understand the methods of log scaling, grading and timber marking; to exercise judgment in estimating marketable content of logs; and to understand forest conservation policies;
- numerical ability to make calculations when estimating marketable content of logs;
- spatial perception, for log scalers, to estimate amount of lumber in logs and to mark felled trees in order to obtain maximum timber yield;
- form perception to grade trees according to condition, size and species;
- eye-hand co-ordination to use such equipment as scale sticks and other measuring aids and stamping axes;

CHAPTER 7516

- strength to carry equipment up to ten pounds in weight, while walking through the forest;
- capacity to climb on felled trees and log piles;

- capacity to stoop, kneel, crouch or crawl when selecting trees for cutting and when examining felled trees;
- near-visual acuity to examine logs when grading or scaling;
- adaptability to work in extremely wet weather conditions, and while exposed to the hazard of falling trees and limbs.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- twelve years of general education;
- two years of vocational training in forest technology; or

- four years of on-the-job training and experience in related occupations, preferably with a period as 7516-118 LOG SCALER.

B

- eight years or more of general education;
- three months of vocational training in forestry; or
- six months to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in Cluster B who have acquired the necessary experience and training may advance to 7516-110 TIMBER CRUISER. Experienced workers in both clusters who have supervisory ability may advance to appropriate occupations in Volume I, Unit Group 7510, FOREMEN, FORESTRY AND LOGGING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Because of the specialization and the skills involved in the occupations, transfer possibilities for 7516-110 TIMBER CRUISER are very limited. Workers in Cluster B are similarly restricted, but may transfer to the other occupations within the cluster.

CLUES FOR RELATING PERSONS TO OCCUPATIONS REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities which are non-social in nature and are carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- additionally, for Cluster B, routine, concrete and organized work.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria;
- working alone and apart in physical isolation from others, although activity may be integrated with that of others;
- a variety of duties often characterized by frequent change.

B

- the evaluation of information against measurable or verifiable criteria;
- repetitive or short cycle operations carried out according to set procedures or sequences;
- for 7513-114 TIMBER MARKER, working alone and in physical isolation from others, although activity may be integrated with that of others.

LOG HOISTING, SORTING, MOVING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with rigging log-yarding systems, hoisting cut logs, hauling logs from site of operations to loading area, sorting logs at points of assembly, and forming log booms on water. Worker functions include; operating mobile log-yarding and hoisting equipment; driving logging tractors and operating accessories; manipulating tools, chains and cables when installing and adjusting rigging, and when mounting logging equipment on tractors, trucks or cranes; handling axes, pike poles, power-saws and other logging tools; and signalling directions to winch operators or other workers. Work activities include; attaching pulleys, cables and guy lines to stumps; selecting logs for loading; fastening choker cables around logs; and guiding logs in water.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
7517-110	STEEL-SPAR OPERATOR (forest. & log.)	3	6	7517-122	LOGGING-CRANE OPERATOR (forest. & log.)	2	5
7517-118	LOGGING-TRACTOR OPERATOR (forest. & log.)	3	5	7517-126	BOOMBOAT OPERATOR (forest. & log.)	2	4

B

		GED	SVP
7517-114	RIGGING SLINGER (forest. & log.)	3	6

C

		GED	SVP			GED	SVP
7517-130	BOOMMAN (forest. & log.)	2	4	7515-134	BOOMMAN, MILL POND (forest. & log.)	2	4
				7517-138	LOG DRIVER (forest. & log.)	2	4

D

		GED	SVP			GED	SVP
7517-142	CHASER (forest. & log.)	2	4	7517-146	LOADER, LOGGING TRUCK (forest. & log.)	2	4
				7517-150	CHOKERMAN (forest. & log.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5		L 47	O 56	3-2	6-4	913	23Y
	4							3		<u>4</u>								
B	3	4	5	<u>3</u>	4	5	<u>3</u>	3	<u>3</u>	<u>4</u>	5		H 245	O 6	3	6	913	4Y
C	4	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>2</u>	5		H 234	O 46	2	4	13	23
D	4	4	5	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	<u>4</u>	5		H 234	O 56	2	4-2	13	23
				<u>3</u>			4	<u>4</u>										

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply the techniques of sorting, hoisting and moving logs, and of mobile equipment or boat operation;
- spatial perception to observe relative paths or positions of moving logs, and to operate and drive mobile logging equipment;
- eye-hand-finger co-ordination and manual dexterity to move hand controls of logging equipment, use hand and power tools such as axe and powersaw, and guide logs using peavey or pike poles;
- eye-hand-foot co-ordination to drive and operate mobile logging equipment, and balance while working on log booms, or climbing onto log piles;
- ability to reach to guide logs, attach accessories to equipment, or fasten lines and cables to logs;
- adaptability to work outside while exposed to hazards such as falling trees, snapping cables, overturning machinery, or falling off logs in booms.

Additionally for

B

- strength to perform heavy work requiring lifting and carrying objects weighing in excess of fifty pounds;
- agility to climb over fallen trees and other ground obstructions.

C

- strength to perform heavy work requiring pushing and pulling heavy logs in water;
- agility to balance on floating logs;
- ability to stoop, kneel, crouch and work in awkward positions.

D

- strength to perform heavy work requiring lifting and carrying objects weighing in excess of fifty pounds;
- agility to climb over fallen trees and other ground obstructions and to climb onto log piles;
- ability to stoop, kneel, crouch and work in awkward positions.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten to twelve years of general education;
- up to six months of on-the-job training;
- six to eighteen months of experience in other occupations concerned with log hoisting, sorting and moving.

B

- ten years of general education;
- up to six months of on-the-job training;
- one year of experience in other occupations concerned with log hoisting, sorting and moving.

C and D

- eight years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may, with some additional training, advance to higher skilled occupations within the chapter. Those with supervisory potential may also advance to 7510-118 FOREMAN, LOG-HOISTING, SORTING, MOVING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within the chapter. Some workers may also transfer to appropriate occupations that require similar skills in other work fields such as construction, or mining and quarrying.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Additionally, for **A** and **B**;

- activities which are basically non-social in nature and are carried on in relation to processes, machines and techniques.

Temperaments**A**

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards in the operation of machinery or equipment.

B

- the direction, control and planning of activities associated with removing logs from forest;
- the precise attainment of set limits, tolerances or standards such as the installation of logging rigging.

C and D

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction allowing little or no room for independent action or judgment in working out job problems.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, FORESTRY AND LOGGING

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in forestry and logging. Worker functions include: handling cones, seedlings and pulp wood, and using tools such as the peavey, shovel, axe and mattock to work or move forest products. Work activities include: loading or stacking logs; pruning and thinning out trees; picking seed cones; planting seedling trees; spraying forest areas with insecticides; and suppressing forest fires.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7511-118T	TREE PRUNER (forest. & log.)	2	2*	7518-114	SEED-CONE PICKER (forest. & log.)	1	2
7511-122T	FOREST-FIRE FIGHTER (forest. & log.)	2	2	7518-118	SPRAYER (forest. & log.)	1	2
7513-126T	SWAMPER (forest. & log.)	2	1*	7518-122	TREE PLANTER (forest. & log.)	1	2
7518-110	LOG LOADER (forest. & log.)	1	2	7518-126	PULPWOOD PILER (forest. & log.)	1	1

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	5	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	M-VH 234	O 67	2-1	2-1	13	23
	4					<u>3</u>				4						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple instructions to perform a variety of uncomplicated tasks;
- spatial perception to ensure even weight distribution when loading logs onto trucks, to select and thin out young trees, or to ignite back fires to hasten burnout within contained areas;
- eye-hand-finger co-ordination and manual dexterity to use cant hooks, axes, shovels and other tools related to forest work;
- eye-hand-foot co-ordination to climb trees and traverse rough terrain;

- physical fitness, and sufficient strength to perform medium to very heavy work when lifting logs or when carrying seedlings, bags of seed cones, or tools and equipment;
- ability to climb trees and balance on limbs and log piles;
- ability to reach to pick seed cones and to stoop, kneel or crouch while planting seedling trees or thinning underbrush;
- adaptability to work outside while exposed to the hazards of falling trees and limbs.

Additionally, 7511-122T FOREST-FIRE FIGHTERS are exposed to the hazards of burns and inhalation of smoke, and 7518-118 SPRAYERS are exposed to toxic fumes from insecticide sprays.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specified educational level;
- on-the-job training ranging from a short demonstration to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs, and advancement may be to more skilled occupations for workers who demonstrate ability, interest and initiative.

Transfer

Workers in this chapter may transfer to other occupations within the chapter after short periods of orientation or to other labouring and elemental work of an outdoor nature.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- activities which are routine, concrete and organized.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

OTHER CLUES

- a preference for working out-of-doors.

ROTARY WELL-DRILLING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with drilling wells into the earth to extract oil and gas. Worker functions include: controlling the operation of rotary-drilling and power-hoisting equipment; manipulating hand tools to connect and disconnect drill-pipe casing and drill bits, and to make repairs to drilling equipment; comparing information obtained from core samples and measuring instruments; compiling data from drilling logs and core samples to determine nature of strata and decide treatment needed for oil and gas-bearing-rock formations to increase their production; and driving vehicles. Work activities include: erecting service rigs; selecting drill bits; capping, cementing and treating wells to regulate flow; replacing and adjusting wellhead equipment; stacking drill pipe; weighing and mixing drilling mud; and lubricating mechanical equipment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
7711-110	SERVICE-UNIT OPERATOR, OIL WELL (oil & nat. gas)	4	7	7711-130	FORMATION-FRACTURING OPERATOR (oil & nat. gas)	3	6
7711-114	CEMENTER, OIL WELL (oil & nat. gas)	4	6	7711-134	DERRICKMAN (oil & nat. gas)	3	6
7711-118	ROTARY DRILLER (oil & nat. gas)	3	7	7711-138	WELL PULLER (oil & nat. gas)	3	5
7711-122	ROTARY-RIG ENGINEMAN (oil & nat. gas)	3	7	7711-142	CLEAN-OUT DRILLER (oil & nat. gas)	3	5
7711-126	ACIDIZER (oil & nat. gas)	4	5	7711-146	HOIST OPERATOR (oil & nat. gas)	3	5

B

		GED	SVP			GED	SVP
7711-150	ACIDIZER HELPER (oil & nat. gas)	3	4	7711-162	FORMATION-FRACTURING-OPERATOR HELPER (oil & nat. gas)	3	3
7711-154	CEMENTER HELPER, OIL WELL (oil & nat. gas)	3	4	7711-166	CLEAN-OUT-DRILLER HELPER (oil & nat. gas)	2	3
7711-158	ROTARY-DRILLER HELPER (oil & nat. gas)	3	4	7711-170	ROUSTABOUT (oil & nat. gas)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	5	M-H 34567	O 4567	4-3	7-5	91	0Y	
		4	3	4	4	5	<u>4</u>		<u>4</u>									
B	4	4	4	4	4	5	<u>4</u>	4	<u>3</u>	4	5	H 234	O 4567	3-2	4-3	139	23	
			5			4				3								

APTITUDES AND CAPACITIES

Workers in these cluster require:

A

- learning and reasoning ability to understand the principles and apply the techniques involved in rotary well-drilling and related oil and natural gas production activities;
- spatial perception, especially important for drillers and those who

service or treat wells, in order to visualize the location of the drill-bit in the well hole, the positioning of pipe sections that form the complete assembly, and the nature of the rock formations penetrated;

- form perception to examine core and drilling samples to determine

the condition of the well, and to detect wear or flaws in parts when repairing drilling-rig equipment;

- eye-hand-finger co-ordination to control hoisting machinery that raises or lowers drill pipe, instruments or well clean-out equipment, and to place pipe sections in position accurately and quickly;
- manual dexterity to push or pull control levers of hoisting machinery, and to tighten or loosen threaded joints between pipe sections, and to handle tools to replace parts of drilling-rig equipment.

B

- learning ability to understand the techniques involved in rotary well-drilling and related activities;
- eye-hand-finger co-ordination to dismantle and repair well-drilling equipment;
- manual dexterity to connect drilling pipe, assemble pumping equipment, casings and pipe sections, and handle tools to repair machinery;
- eye-hand-foot co-ordination to operate the levers, pedals and steering wheel of vehicles.

Additionally, workers in both clusters require:

- strength to perform medium to heavy work requiring frequent lifting and carrying of tools and equipment weighing up to one hundred pounds;
- physical capacity to climb onto trucks and throughout drilling rigs, and to repair derrick equipment;
- capacity to stoop, kneel and crouch in awkward positions in order to lift or move heavy tools and change drill bits, and to reach, pull and push heavy piping into position above and below shoulder height;
- capacity to give or receive verbal instructions;
- visual acuity and depth perception to position drill pipe over drill hole, to read meters and gauges, observe defects in machinery, and examine drilling or core samples to determine nature of strata;
- capacity to work outdoors under all weather conditions in water, mud and oil around drilling site, and with muddy equipment;
- capacity to work against a background of loud noises caused by drilling-rig machinery and diesel engines;
- capacity to adapt to hazardous conditions, such as risk of injury from moving equipment, slippery footing, and exposure to gas fires and explosions at well;
- adaptability to unpleasant atmospheric conditions such as the odour of hydrogen sulphide gas and diesel engine fumes.

TRAINING AND ENTRY REQUIREMENTS

Workers in these cluster normally require:

A

- ten to twelve years of general education;
- for operators of rotary well-drilling rigs and those who operate equipment to flush or remove obstructions from producing wells, two to four years of on-the-job training and related experience;

- for the remaining occupations, six months to two years of on-the-job training and related experience.

B

- eight to ten years of general education;
- three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may, with additional training, advance to higher skilled occupations within their respective cluster, or from Cluster B to Cluster A. Experienced workers with supervisory potential may also advance to 7710-126 FOREMAN, ROTARY WELL-DRILLING AND RELATED OCCUPATIONS, or to 7710-122 FOREMAN, OTHER ROCK AND SOIL DRILLING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their respective clusters, or to occupations in Chapter 7713, OTHER ROCK AND SOIL DRILLING OCCUPATIONS; and Group 7719, MINING AND QUARRYING INCLUDING OIL AND GAS FIELD OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- activities that are basically non-social in nature, and are performed in relation to machines and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

B

Interests

- dealing with things and objects;
- work which is usually routine and well organized;
- activities that are basically non-social in nature, and are performed in relation to machines and techniques.

Temperaments

- repetitive or short cycle operations, performed according to set procedures or sequences;
- doing things under specific instructions, allowing little or no room for independent action or judgment in working out job problems.

OTHER ROCK AND SOIL DRILLING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with drilling rock and soil for a variety of purposes such as blasting to facilitate mining operations and construction projects, tapping sub-surface water and mineral deposits, breaking and separating rock, seismic prospecting, and taking core samples. Worker functions include: operating drilling equipment; manipulating tools to connect, assemble and adjust equipment; driving truck-mounted drilling rigs to work site; and handling air and water hoses, electric cables and drill bits. Work activities include: coupling hoses to supply lines; positioning equipment to drill holes in specified location and direction; installing drill-bits; monitoring operation of drilling machines and making adjustments or adding steel as drill advances; examining drill cuttings or cores; and repairing and maintaining equipment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
7713-110	RAISE-BORING-MACHINE OPERATOR (mining & quarrying)	4	7	7713-130	DRILLER, JET-PIERCING (mining & quarrying)	3	5
7713-114	DRILLER, LONG HOLE (mining & quarrying)	4	7	7713-134	DRILLER, SEISMIC PROSPECTING (oil & nat. gas)	3	5
7713-118	DRILLER, WATER-WELL (mining & quarrying)	3	6	7713-138	FOUNDATION-DRILL OPERATOR (construction)	3	5
7713-122	DRILLING-MACHINE OPERATOR (construction; mining & quarrying)	3	6	7713-142	CHURN-DRILL OPERATOR (mining & quarrying)	3	5
7713-126	CORE-DRILL OPERATOR (construction; mining & quarrying; oil & nat. gas)	3	5	7713-146	DRIFTER (construction)	3	5

B

		GED	SVP			GED	SVP
7713-150	FOUNDATION-DRILL-OPERATOR HELPER (construction)	2	3	7713-162	JACKHAMMER OPERATOR (mining & quarrying)	2	2
7713-154	DRILLER HELPER, WATER-WELL (mining & quarrying)	2	3	7713-166	DRILLING-MACHINE-OPERATOR HELPER (construction; mining & quarrying)	2	2
7713-158	CORE-DRILL OPERATOR HELPER (construction; mining & quarrying; oil & nat. gas)	2	2				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	4	<u>3</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	5	M-H 34567	I-O 4567	4-3	7-5	91	0Y8
		3	3							<u>4</u>	4						
B	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>3</u>	5	H 2345	B 4567	2	3-2	193	2Y
			4				<u>3</u>			<u>4</u>							23

APTITUDES AND CAPACITIES

Workers in these clusters require:

— learning ability to understand and apply the principles involved in

drilling operations and to operate drilling equipment safely and efficiently;
— spatial perception to visualize the required positioning of drilling

- equipment, the location of the drill bit in the drill hole, and the nature of the formations penetrated;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to operate controls of drilling equipment, skilfully use a variety of tools to make adjustments and repairs, erect and dismantle rigs, and make connections for lines and cables;
- eye-hand-foot co-ordination to drive vehicles or crawler mounted equipment and to operate controls such as levers and foot pedals;
- visual acuity to read meters and drawings or sketches, and to examine drill samples from holes and observe equipment while in operation.

B

- learning ability to understand and apply drill assembly procedures and to follow directions;

- eye-hand co-ordination and manual dexterity to guide drill sections, fasten drills, attach air and water lines and to use a variety of tools during assembly and operational stages of drillings;
- eye-hand-foot co-ordination to climb and maintain balance while working on or around drilling rigs.

Workers in these clusters also require:

- capacity to stoop and crouch to set up drilling equipment, connect drill bits and hoses, and repair equipment;
- adaptibility to wet and muddy conditions around equipment and drill holes;
- capacity to work while exposed to hazardous and unpleasant conditions such as cave-ins and loose rock, revolving drills, intense noise, vibration and dust.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to twelve years of general education;
- six months to two years of on-the-job training;

B

- six months to two years of related experience in this field of work.
- eight years of general education;
- up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Helper occupations in Cluster B are considered entry jobs, and advancement for experienced workers normally is to higher skilled occupations in Cluster A. Experienced workers in Cluster A with supervisory potential may advance to 7710-122 FOREMAN, OTHER ROCK AND SOIL DRILLING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may, with limited additional training, transfer to other occupations within their cluster, or to appropriate occupations requiring similar skills in other chapters of Minor Group 771, MINING AND QUARRYING INCLUDING OIL AND GAS FIELD OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- activities that are basically non-social in nature, and performed in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- performing adequately under stress when confronted with the critical or unexpected when working in underground mines.

B

Interests

- dealing with things and objects;
- activities that are basically non-social in nature and are performed in relation to processes, machines and techniques;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations, performed according to set procedures or sequences;
- working under specific instructions, allowing little or no room for independent action or judgment in working out job problems.

BLASTING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with assembling, placing and detonating explosive charges to loosen mineral ores in underground or surface mines, or to loosen earth, rock and stumps or demolish structures on construction sites. Worker functions include: analyzing data pertaining to the mass, composition, location or structure of the material to be blasted in order to determine the position, type and amount of explosive required; working with care and precision when assembling and positioning explosive charges; compiling information regarding working procedures at blasting site to ensure safety regulations are followed; and handling explosives, detonating wires, safety mats and other blasting equipment. Work activities include: driving truck containing explosives; storing and maintaining inventories of explosives; inspecting blasting area for safety; and removing loose rock from working face of mines or excavations.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
7715-110	BLASTER (mining & quarrying)	4	7	7715-122	PIT SCALER (construction; mining & quarrying)	4	5
7715-114	BLASTER (construction)	4	6	7715-126	SHOOTER, SEISMOGRAPH (oil & nat. gas)	3	6
7715-118	PERFORATOR, OIL WELL (oil & nat. gas)	4	6	7715-130	PERFORATING-GUN LOADER (oil & nat. gas)	3	5

B

		GED	SVP			GED	SVP
7715-134	BLASTER HELPER (construction; mining & quarrying)	3	4	7715-138	SHOOTER HELPER (oil & nat. gas)	3	4
				7715-142	PIT-SCALER HELPER (construction; mining & quarrying)	2	3

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>2</u>	3	4	<u>4</u>	<u>4</u>	<u>3</u>	3	4	M-H 34567	B-O 567	4-3	7-5	917	9Y8
			3	<u>3</u>	4	5	<u>3</u>	<u>3</u>	<u>4</u>	4	<u>2</u>						
B	3	4	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	4	M-H 34567	O 567	3-2	4-3	139	3Y8
	4						<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	5						

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply the principles, techniques and safety regulations applicable to the use, handling, and firing of explosives, and to exercise judgment in determining the location and most appropriate blasting procedure to be followed;
- spatial perception to visualize the pattern and amounts of explosives required to obtain the desired results, based on observation of the characteristics of rock faces, structures and formations, and to interpret seismic wave readings used to locate oil and natural gas deposits;

- eye-hand-finger co-ordination and manual dexterity to assemble explosive charges or perforators, connect detonating wires and charge drill holes with explosives;
- finger dexterity to perform such tasks as assembling perforating gun components using specialized tongs, screwdrivers and wrenches.

B

- learning ability to understand established blasting procedures and regulations, and to follow directions;
- eye-hand co-ordination and manual dexterity for a variety of tasks

such as attaching detonating wires, charging drill holes with explosives, covering and tamping holes with clay or similar material, and for using scaling tools.

Workers in these clusters also require:

- eye-hand-foot co-ordination to drive vehicles, and to balance and climb on scaffolds and rough terrain when drilling blast holes into working face or removing loose rock from walls of mines, pits and construction sites;
- capacity to perform medium to heavy work requiring frequent lifting and carrying of equipment weighing up to fifty pounds, or occasional pushing and pulling on scaling bar, exerting a force of up to one hundred pounds;
- capacity to stoop, kneel and crouch when inserting explosives into blast holes;

- ability to communicate orally with blasting crews, and to hear blasting signals, and sounds which might indicate unsafe conditions in mines, pits or quarries;
- near visual acuity to assemble and connect explosive charges, and far visual acuity to identify composition and assess mass of ground to determine the most desirable blasting pattern;
- adaptability to working outside with little or no protection from the weather, or underground in mines;
- capacity to withstand intense noise when detonating explosive charges;
- adaptability to unpleasant and hazardous conditions associated with working in a mine or pit, and when working with dangerous explosives.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine or ten years of general education;
- on-the-job training of six to twelve months;
- previous experience in related work for at least six months;

B

- completion of provincial licencing and certification requirements.
- eight years of general education;
- up to three months of on-the-job training;
- completion of provincial licencing and certification requirements.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for experienced helpers normally is to higher skilled occupations in Cluster A. Experienced workers in Cluster A with supervisory potential may advance to 7710-110 FOREMAN, BLASTING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer opportunities for workers in this chapter are normally limited to other appropriate occupations within their own cluster. With some additional training, some experienced workers in Cluster A may, because of long and co-operative team-work with drillers, transfer to appropriate occupations in Chapter 7713, OTHER ROCK AND SOIL DRILLING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, performed in relation to processes, machines and techniques;
- dealing with things and objects;

Additionally, for 7715-118 PERFORATOR, OIL WELL, and 7715-126 SHOOTER, SEISMOGRAPH:

- scientific and technical work.

Temperaments

- the evaluation of information against sensory or judgmental criteria;
- the precise attainment of set limits, tolerances or standards;
- performing adequately under stress when confronted with the critical or unexpected, or taking risks;
- the evaluation of information against measurable or verifiable criteria, for occupations 7715-118 PERFORATOR, OIL WELL and 7715-130 PERFORATING-GUN LOADER.

B

Interests

- dealing with things and objects;
- routine, concrete and organized work;
- non-social work, performed in relation to processes, machines and techniques.

Temperaments

- carrying out duties only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards;
- performing adequately under stress when confronted with the critical or unexpected, or taking risks.

MINING AND QUARRYING: CUTTING, HANDLING AND LOADING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with operating machines that cut and remove minerals and other materials in underground and open pit mines or quarries, and load removed material onto conveyances for transfer to processing, storage or waste disposal locations. The primary worker function is driving and operating mining machinery and equipment, such as excavators, power shovels and conveyors. Work activities include: moving controls of cutting and loading machines; starting and stopping conveying equipment; observing flow of material and operation of equipment to detect abnormal conditions; loading and unloading mine cages; and making adjustments and minor repairs to machinery and equipment.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7717-110	BUCKETWHEEL-EXCAVATOR OPERATOR (mining & quarrying)	3	6	7717-138	BELTWAGON OPERATOR (mining & quarrying)	3	4
7717-114	AUGERMAN (mining & quarrying)	3	5	7717-142	BOOM-CONVEYOR OPERATOR (mining & quarrying)	3	4
7717-116	STRIPPING-SHOVEL OPERATOR (mining & quarrying)	3	5	7717-146	LOADING-MACHINE OPERATOR (mining & quarrying)	3	4
7717-118	CONTINUOUS-MINING-MACHINE OPERATOR (mining & quarrying)	3	5	7717-150	CAGEMAN (mining & quarrying)	3	4
7717-122	CUTTING-MACHINE OPERATOR (mining & quarrying)	3	5	7717-154	MECHANICAL-SHOVEL OPERATOR (mining & quarrying)	2	4
7717-126	QUARRYMAN (mining & quarrying)	3	5	7717-158	PEAT MOSS-CUTTING-MACHINE OPERATOR (mining & quarrying)	2	3
7717-130	AERIAL-TRAM OPERATOR (mining & quarrying)	3	4	7717-162	PEAT MOSS-GATHERING-MACHINE OPERATOR (mining & quarrying)	2	2
7717-134	SLUSHER OPERATOR (mining & quarrying)	3	4	7717-166	CHUTE LOADER (mining & quarrying)	2	2

N.B. Occupation 7717-170 COBBER (mining & quarrying) has been transferred, for Volume II purposes, to Chapter 7718, OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, MINING AND QUARRYING INCLUDING OIL AND GAS FIELDS.

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
3	4	4	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>4</u>	5	L-H 2347	I-O 567	3	6-2	913	23Y8
4		5	<u>4</u>		4	<u>4</u>		<u>4</u>	<u>3</u>							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the operation of complex heavy machinery, and to apply the techniques involved in positioning machinery and equipment when excavating ore from mines or stone from quarries;
- spatial perception to judge distances when manoeuvring, cutting or excavating machines and to visualize optimum placement for equipment;
- eye-hand-finger co-ordination and manual dexterity to start, regulate and stop equipment;
- eye-hand-foot co-ordination to operate the levers and pedals of cutting and excavating machinery;
- capacity to perform light to heavy work requiring frequent lifting or carrying of tools and equipment weighing up to twenty pounds, or occasional pushing and pulling with a force of up to one hundred pounds;
- ability to climb and balance or stoop and crouch to operate, clean and lubricate machinery and equipment;
- colour vision to detect high grade ore;
- adaptability to working under unpleasant conditions such as being

- exposed to noise and vibration of mining machinery, and fumes, odours and dusts from blasting and mining operations;
- adaptability to working while exposed to hazards such as cave-ins,

proximity of explosives, high voltage cables, heavy and often awkwardly moving equipment and to working on elevated platforms.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- ten years of general education;

- three months to two years of on-the-job training and experience in related occupations.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to other occupations within the chapter that require higher skill levels. Those with supervisory potential may advance to 7710-114 FOREMAN, CUTTING AND LOADING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer, with limited additional training, to occupations requiring similar skills in Minor Group 771, MINING AND QUARRYING INCLUDING OIL AND GAS FIELD OCCUPATIONS, or to occupations in construction trades concerned with operating earth-moving equipment such as 8711-122 MUCKING-MACHINE OPERATOR, 8711-142 POWER-SHOVEL OPERATOR and 8711-174 LOADER OPERATOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, performed in relation to processes, machines and techniques;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations performed according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out problems;
- the precise attainment of set limits, tolerances or standards;
- performing adequately under stress when confronted with the critical or unexpected or taking risks, particularly when working with underground areas.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, MINING AND QUARRYING, INCLUDING OIL AND GAS FIELDS

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work found in mining and quarrying operations. The primary worker function is handling, moving or carrying mine supplies and equipment, spilled ore and waste materials, and using picks, crow-bars and similar tools to perform manual work. Work activities include: shovelling ore and rock into mine cars and trucks; positioning slushing machinery; assisting in the erection of mine supports; freeing ore blockages in grizzlies; spraying rock dust over mine surfaces; picking waste material from conveyors; cleaning refuse from mine and railroad cars; and cutting or gathering peat moss.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
7718-110	LABOURER, GENERAL, MINE (mining & quarrying)	2	2	7718-130	TIMBER AND STEEL-PROP SETTER HELPER (mining & quarrying)	1	2
7718-114	LABOURER, GENERAL, QUARRY (mining & quarrying)	2	2	7718-134	PEAT MOSS GATHERER, HYDRAULIC (mining & quarrying)	1	2
7717-170T	COBBER (mining & quarrying)	2	2	7718-138	CAR CLEANER (mining & quarrying)	1	1
7718-118	SLUSHER-OPERATOR HELPER (mining & quarrying)	1	2	7718-142	GRIZZLY WORKER (mining & quarrying)	1	1
7718-122	ROCK DUSTER (mining & quarrying)	1	2	7718-146	PEAT MOSS CUTTER, HAND (mining & quarrying)	1	1
7718-126	SLATE PICKER (mining & quarrying)	1	2				

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	5	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	M-H 2347	B 4567	2-1	2-1	31	231
	4							<u>4</u>								23

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand simple instructions and to apply them correctly in performing a variety of uncomplicated tasks;
- eye-hand-finger co-ordination and manual dexterity when working with tools, positioning equipment, putting up mine supports or picking objects from moving conveyors;
- eye-hand-foot co-ordination to safely accomplish tasks such as attaching cables and slings, coupling and moving mine cars, and positioning mining equipment;
- physical strength to perform medium to heavy work such as digging

ditches and working with pick, hammer and crowbar, and frequently lifting and carrying objects weighing up to one hundred pounds;

- capability of working for long periods of time in a stooped position while shovelling ore and rock, picking up waste materials, pushing ore cars and assisting with installation of underground supports;
- capacity for working in confined areas and in an underground environment which is frequently humid and wet;
- capacity for working in noisy and dusty locations and in proximity to mine or quarry machinery where possible risk of body injury exists.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specific educational requirements;

- on-the-job training ranging from a short demonstration to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Many of these occupations are considered entry jobs and advancement is normally to more highly skilled occupations in mining or quarrying. Those who acquire additional training may advance to occupations such as operators of mining and quarrying equipment. Experienced workers with supervisory ability may advance to 7710-118 FOREMAN, LABOURERS AND OTHER ELEMENTAL WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to other occupations within this chapter that require similar skills. With limited additional training, transfer may also be to other labouring occupations such as 8718-118 LABOURER, EXCAVATION, and 8798-114 CONSTRUCTION LABOURER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects, such as tools to move rock and ore;
- activities of a routine, concrete and organized nature.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- performance of duties according to specific instructions, allowing little or no room for independent action or judgment in working out job problems.

Workers in the occupations of 7718-110 LABOURER, GENERAL, MINE and 7718-114 LABOURER, GENERAL, QUARRY are required to perform a variety of duties, often characterized by frequent change.

GROUP 7719

MINING AND QUARRYING INCLUDING OIL AND GAS FIELD OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, in mining and quarrying, oil and natural gas production and mineral exploration, concerned with activities, such as quality control, enforcing safety regulations, and with mining, underground construction work and related support-work; and with prospecting for water, tending brine wells, and assisting in gravity and seismic prospecting.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
Inspecting, Testing, Grading and Sampling Occupations, Mining and Quarrying, Oil and Natural Gas																		
7719-110	OIL-PIPE INSPECTOR (oil & nat. gas)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>4</u>	4	4	M 457	B 5	4	6	971	90Y
7719-112	SAFETY INSPECTOR, MINES (mining & quarrying)	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	4	4	4	4	4	4	L 234567	I 67	4	6	921	90Y5
7719-114	FIRE BOSS (mining & quarrying)	<u>3</u>	3	4	3	<u>3</u>	4	<u>4</u>	4	4	4	4	L 23457	I 567	3	6	139	90Y
7719-118	COAL INSPECTOR (mining & quarrying)	<u>3</u>	3	3	<u>4</u>	<u>3</u>	4	4	4	4	5	4	L 457	B 7	3	6	13	90Y
7719-122	SIDEWALL-CORE SAMPLER (oil & nat. gas)	3	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>4</u>	4	5	L 457	O 6	3	5	91	0Y
7719-126	PIPE TESTER (oil & nat. gas)	3	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>4</u>	4	5	M 234	O 56	3	5	91	0Y
7719-130	SAMPLE WASHER (oil & nat. gas)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	4	5	L 4	I 4	2	2	13	23
7719-134	CORE SPLITTER (mining & quarrying)	4	4	4	4	4	4	<u>4</u>	4	<u>4</u>	5	5	M 347	I 6	2	2	13	23
Miners and Support Workers																		
7719-154	MINER, ALL-ROUND (mining & quarrying)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	VH 234567	I 4567	3	7	91	Y081
7719-158	TIMBER AND STEEL-PROP SETTER (mining & quarrying)	<u>3</u>	4	3	<u>3</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	5	H 3457	I 567	3	6	91	Y08
7719-162	STEEL ERECTOR (mining & quarrying)	<u>3</u>	4	4	<u>3</u>	4	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	VH 2347	I 4567	3	6	91	Y081
7719-164	SHAFTMAN (mining & quarrying)	<u>3</u>	4	4	<u>3</u>	4	5	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	5	H 234	O 67	3	6	91	Y081
7719-166	MINER, CONSTRUCTION (construction)	3	4	4	<u>3</u>	4	5	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	5	H 3467	I 4567	3	5	91	Y08
7719-170	ROOF BOLTER (mining & quarrying)	3	4	5	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	H 34	I 4567	3	5	913	Y8
7719-172	BRATTICE MAN (mining & quarrying)	4	4	4	<u>3</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	<u>4</u>	5	H 34	I 67	3	4	13	Y8
7719-174	LAMPMAN (mining & quarrying)	4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I	3	3	13	0Y
7719-178	NIPPER (mining & quarrying)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>3</u>	5	VH 34	I 23467	2	3	139	23Y8
7719-182	MINER HELPER (mining & quarrying)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>3</u>	5	VH 2347	I 4567	2	3	13	238
7719-186	TIMBER AND STEEL-PROP SALVAGER (mining & quarrying)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>3</u>	5	VH 34	I 4567	2	3	13	238
7719-190	BACK-FILL MAN (mining & quarrying)	4	4	5	5	4	5	<u>4</u>	4	<u>4</u>	4	5	M 2345	I 467	2	2	13	23
Other Mining and Oil and Gas Field Occupations																		
7719-210	DOWSER (bus. serv.)	3	4	4	<u>3</u>	4	4	4	4	4	<u>4</u>	5	L 456	O	3	5	13	9Y
7719-214	BRINE-WELL TENDER (mining & quarrying)	3	4	4	4	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>4</u>	5	5	L 4	I	3	4	319	2Y
7719-218	OBSERVER HELPER, GRAVITY PROSPECTING (oil & nat. gas)	4	4	4	<u>4</u>	4	4	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>3</u>	M 4	O 6	2	3	139	2Y
7719-222	OBSERVER HELPER, SEISMIC PROSPECTING (oil & nat. gas)	4	4	4	<u>4</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	5	M 34	O	2	2	139	2Y

CRUSHING AND GRINDING OCCUPATIONS, MINERAL ORES**WORK PERFORMED**

This chapter includes occupations concerned with crushing and grinding minerals and ores to a smaller state, for industrial use or for further processing. Worker functions include: analyzing production schedules to determine amounts and grades of specified materials required for processing; operating or tending equipment that crushes or grinds minerals and ores; manipulating hand tools to adjust equipment; shovelling spillage back onto conveyors that feed materials into mills; and handling ore and a variety of tools when clearing blockages. Work activities include: moving controls to start, stop and regulate operation of equipment; observing panelboards, material flow and equipment operation to detect malfunctions; breaking up large ore pieces using bar, pick or hammer; collecting material samples for laboratory analysis; and cleaning and lubricating equipment.

LIST OF OCCUPATIONAL TITLES**A**

		GED	SVP			GED	SVP
8111-110	PANELBOARD OPERATOR (iron & steel; non-ferrous metal)	4	6	8111-114	GRINDING-MILL OPERATOR (iron & steel; non-ferrous metal)	3	5

B

		GED	SVP			GED	SVP
8111-118	SLURRY-CONTROL MAN (non-ferrous metal)	3	5	8111-130	CRUSHER TENDER (any ind.)	2	4
8111-122	GRINDING AND CLASSIFIER TENDER (non-ferrous metal)	3	4	8111-132	CRUSHER SETTER (mining & quarrying)	2	3
8111-126	MILL TENDER (iron & steel; non-ferrous metal)	2	4	8111-134	HYDRATE-SCALE-RECLAMATION MAN (non-ferrous metal)	2	3

C

		GED	SVP			GED	SVP
8111-138	MILL-TENDER HELPER (iron & steel; non-ferrous metal)	2	2	8111-142	CRUSHER HELPER (iron & steel; non-ferrous metal)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>4</u>	<u>4</u>	<u>3</u>	4	<u>3</u>	5	4		L 4567	I 57	4-3	6-5	91	Y0
			4															
B	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5		L-M 247	I-B 567	3-2	5-3	913	2Y
	3		5			4	<u>4</u>				4							
C	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5		M 2346	I 567	2	2	13	23
			5							5								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand crushing and grinding operations, and to work from detailed written or oral instructions;
- form perception to detect oversize pieces of ore and blockages on conveyors and to detect worn equipment;
- eye-hand co-ordination to make adjustments to regulate the operation of crushing and grinding equipment while monitoring gauges, meters and material flow;
- manual dexterity to operate equipment controls and use hand tools;
- physical fitness and strength to perform light to medium work requiring the lifting of tools and material weighing up to fifty pounds, the breaking of oversize lumps of ore using hammers, the unplugging of blockages, or the shovelling of spilled material onto conveyors;
- agility to climb stairs and ladders, and balance on catwalks when moving between various levels in processing plant;
- ability to stoop, crouch, kneel or crawl in order to perform such tasks as oiling equipment and unplugging blocked conveyors;

- good visual acuity, both near and far, to read gauges and meters and to observe the flow of material to crushers and grinders from a distance;
- colour vision, required occasionally, to observe indicator lights on panelboards and when conducting titrations;
- capacity to work in conditions of extreme noise, vibration, dusts, odours and fumes caused by crushing and grinding equipment;
- adaptability to working in conditions where there is exposure to a variety of hazards, such as moving mechanical parts, flying particles, chemical burns and falls.

Workers in Cluster A also require:

- spatial perception to interpret abnormalities in equipment operation from panelboard indicators;
- clerical perception to study production schedules and to maintain records of ore processed, machine breakdowns, repairs made and other production data.

Workers in Cluster B also require spatial perception to observe the operation of equipment and make necessary adjustments.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to eleven years of general education;
- six months to two years of on-the-job training and related experience in lower level occupations under the guidance of an experienced operator.

B

- seven to nine years of general education;
- two to twelve months of on-the-job training and related experience in a helper occupation.

C

- seven to eight years of general education;
- up to one month of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Helpers in Cluster C may advance to more skilled occupations in Cluster B; for example, from 8111-142 CRUSHER HELPER to 8111-130 CRUSHER TENDER, while some workers in Cluster B may advance to more complex occupations in Cluster A. Experienced workers in Clusters A and B with supervisory potential may also advance to 8110-110 FOREMAN, CRUSHING AND GRINDING OCCUPATIONS, MINERAL ORES. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Possibilities for advancement for workers in this chapter also exist to other mineral ore processing occupations found in Minor Group 811, MINERAL ORE TREATING OCCUPATIONS.

Transfer

Transfer possibilities for workers in this chapter may be to occupations requiring similar skills within their respective cluster, or to other appropriate mineral ore treating occupations in Minor Group 811, MINERAL ORE TREATING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A**Interests**

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects such as mechanical equipment.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

B**Interests**

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- work that is routine, concrete and well organized.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

C**Interests**

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

MIXING, SEPARATING, FILTERING AND RELATED OCCUPATIONS, MINERAL ORES

WORK PERFORMED

This chapter includes occupations concerned with combining mineral ores with solvents or amalgams to produce a single mass or compound; and separating out desirable materials present in ores or concentrates. Worker functions include: operating, tending or feeding equipment such as agitators, filters, precipitators, evaporators, leachers and classifiers; and handling a variety of tools, parts and materials. Work activities include: setting switches and machine controls; opening and closing valves to start, stop and regulate process flow, and pumping operations; observing panelboard and making adjustments to maintain operating conditions within specified limits; testing solutions to determine physical or chemical characteristics; collecting samples for laboratory analysis; removing residue from sides and bottoms of tanks; and cleaning, lubricating and making minor adjustments to equipment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8113-110	ELECTROLYTIC REFINER (non-ferrous metal)	3	6	8113-126	LEACHING OPERATOR (non-ferrous metal)	3	5
8113-114	GRINDING-AND-FLOTATION OPERATOR (non-ferrous metal)	3	6	8113-130	RESIDUAL-METAL RECOVERER (non-ferrous metal)	3	5
8113-118	SLIME-RECOVERY OPERATOR (non-ferrous metal)	3	5	8113-150	WATER-TREATMENT-PLANT OPERATOR (non-ferrous metal)	3	4
8113-122	CLASSIFIER OPERATOR (non-ferrous metal)	3	5	8113-172	SINK-FLOAT OPERATOR (non-ferrous metal)	3	4

B

		GED	SVP			GED	SVP
8113-134	DEWATERER TENDER (non-ferrous metal)	3	5	8113-178	ZINC-CHLORIDE TENDER (non-ferrous metal)	3	4
8113-138	COTTRELL TENDER (non-ferrous metal)	3	5	8113-182	REAGENT TENDER (non-ferrous metal)	2	4
8113-142	PRECIPITATOR (non-ferrous metal)	3	5	8113-186	DIGESTER TENDER (non-ferrous metal)	2	4
8113-146	HEAVY-MEDIA TENDER (mining & quarrying)	3	5	8113-190	MAGNETIC-SEPARATOR TENDER (iron & steel)	2	4
8113-152	COAL-WASH-PLANT TENDER (mining & quarrying)	3	4	8113-194	SPIRAL ATTENDANT (mining & quarrying)	2	4
8113-154	FLOTATION-CELL TENDER (non-ferrous metal)	3	4	8113-198	AMALGAMATOR TENDER (non-ferrous metal)	2	3
8113-158	ALUMINA-CLARIFIER TENDER (non-ferrous metal)	3	4	8113-202	BRINE MAKER (mining & quarrying)	2	3
8113-162	THICKENER TENDER (iron & steel; non-ferrous metal)	3	4	8113-204	COAL SEPARATOR (mining & quarrying)	2	3
8113-164	CADMIUM RECOVERER (non-ferrous metal)	3	4	8113-205	CONE TENDER (mining & quarrying)	2	3
8113-166	COPPER-DUST COLLECTOR (non-ferrous metal)	3	4	8113-206	ELECTROLYTIC-REFINER HELPER (non-ferrous metal)	2	3
8113-168	FILTERING ATTENDANT (mining & quarrying)	3	4	8113-210	SCREENMAN (mining & quarrying)	2	3
8113-170	ORE SEPARATOR (non-ferrous metal)	3	4	8113-214	SLIME TREATER (non-ferrous metal)	2	3
8113-174	TABLEMAN (non-ferrous metal)	3	4	8113-218	WET-PLANT TENDER (non-ferrous metal)	2	3

		GED	SVP			GED	SVP
8113-226	ASBESTOS SCREENMAN (mining & quarrying)	2	2	8113-230	BAGHOUSE MAN (non-ferrous metal)	2	2

C

		GED	SVP			GED	SVP
8113-222	ZINC-VAPOR CONDENSER (non-ferrous metal)	2	3	8113-242	ALUMINA-CLARIFIER-TENDER HELPER (non-ferrous metal)	2	2
8113-234	PRECIPITATOR HELPER (non-ferrous metal)	2	2	8113-244	COTTRELL-TENDER HELPER (non-ferrous metal)	2	2
8113-238	REAGENT-TENDER HELPER (non-ferrous metal)	2	2	8113-246	FLOTATION-CELL-TENDER HELPER (non-ferrous metal)	2	2
				8113-250	SLIME-RECOVERY-OPERATOR HELPER (non-ferrous metal)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4	L-M 2347	I 4567	3	6-4	91	0Y	
				<u>4</u>	<u>3</u>	5	<u>3</u>				5							
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-M 247	I 4567	3-2	5-2	913	20Y	
	3		5			5	<u>3</u>		<u>4</u>	4	4						23Y	
C	4	4	4	4	4	4	<u>4</u>	4	<u>4</u>	5	5	M 234	I 4567	2	3-2	13	23	
						5	<u>3</u>		<u>3</u>	4								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand the techniques of mineral-ore mixing, separating, filtering and related operations, and to follow written or oral work instructions;
- eye-hand co-ordination to adjust valves and equipment controls while monitoring gauges, meters and indicator lights;
- manual dexterity and the capacity to reach in any direction to turn valves, operate controls, and use hand tools to set up, adjust and repair equipment;
- strength to perform light to medium work, requiring the lifting and carrying of tools, parts and materials weighting up to fifty pounds; and physical capacity to shovel material into or out of processing tanks or to scrape caked material from tank sides;
- capacity to climb stairs and ladders, and balance on catwalks when moving between floors or levels in processing plant;
- ability to stoop, crouch, kneel or crawl in order to shovel material, and to set up, clean, lubricate and repair equipment;
- visual acuity, both near and far, to observe gauges, meters and

charts, to read measuring instruments such as hydrometers and pH meters, and to observe processing operations from a distance;

- colour vision to recognize indicator lights on panelboards;
- capacity to work while exposed to generally unpleasant conditions such as wetness and dampness, noise and vibration, and dusts, fumes and odours from processing operations;
- capacity for working in conditions where there is exposure to a variety of hazards such as moving mechanical parts, falls, physical strains, chemical burns, molten metal, and explosions from accumulated gases.

Additionally, for Cluster A:

- spatial perception to understand circulation of product through equipment, and the effect of irregularities in one area on total system function; to translate control panel indications into the actual operating process, and to read charts and graphs of operation.

Workers in Clusters A and B also require form perception for such activities as observing the deposition of metal on cathode in electrolytic refining, and liquid levels in tanks.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine or ten years of general education;
- four months to two years of on-the-job training and experience in related occupations of lesser complexity.

B

- eight to ten years of general education;
- one month to one year of on-the-job training and experience in related work.

C

- seven or eight years of general education;
- one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may advance to higher skilled occupations within their respective cluster, or from Cluster C to B, and from B to Cluster A. Experienced workers with supervisory potential may also advance to 8110-126 FOREMAN, MIXING, SEPARATING, FILTERING AND RELATED OCCUPATIONS, MINERAL ORES. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations within their respective clusters. Transfer possibilities may also be to appropriate occupations requiring similar skills in Minor Groups 811, MINERAL ORE TREATING OCCUPATIONS; and 816/817, CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects of a mechanical nature.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

B

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

C

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instructions, allowing little or no room for independent action or judgment in solving job problems.

MELTING AND ROASTING OCCUPATIONS, MINERAL ORES

WORK PERFORMED

This chapter includes occupations concerned with heating mineral ores or concentrates to change them from a solid to a liquid state for compounding with other materials, and roasting ores and concentrates to remove impurities. Worker functions include: operating, controlling, tending or feeding equipment such as furnaces, kilns and sintering machines to process mineral ores; and comparing processed materials with specified standards. Work activities include: setting equipment controls and opening and closing valves to start, stop and regulate charging and processing operations; observing indicating or recording devices and material being processed and maintaining operating conditions within specified limits by making required adjustments; testing samples, or forwarding samples to laboratory for analysis; and cleaning, lubricating and making minor adjustments to equipment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8115-110	ROASTER OPERATOR (non-ferrous metal)	3	6	8115-118	SINTERING-MACHINE OPERATOR (iron & steel; non-ferrous metal)	3	5
8115-114	LIMESTONE BURNER (non-metal. min. prod., n.e.c.)	3	5	8115-122	CALCINER (non-metal. min. prod., n.e.c.)	3	5
				8115-126	KILN OPERATOR (non-ferrous metal)	3	4

B

		GED	SVP			GED	SVP
8115-130	ORE ROASTER (non-ferrous metal)	3	4	8115-138	LIMESTONE-BURNER HELPER (non-metal. min. prod., n.e.c.)	2	2
8115-134	ROTARY-KILN TENDER (iron & steel)	2	3				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	4	M 24567	I 3567	3	6-4	91	0Y
				<u>3</u>	<u>3</u>	4	<u>3</u>		<u>4</u>	4	5						
B	4	4	4	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	4	4	M 47	I 3567	3-2	4-2	139	23Y
			5			4	<u>4</u>		<u>4</u>		5						

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand mineral-ore melting and roasting operations, apply the techniques involved, and carry out detailed written or oral work instructions;
- form perception to examine finished materials for deviations from standards;
- eye-hand co-ordination and manual dexterity to adjust valves and equipment controls while monitoring gauges, charts and meters, and to use pick, shovel, bars and other tools;
- strength to perform medium work requiring the lifting of tools and materials weighing up to fifty pounds, and capacity for pushing handtrucks or chipping caked material from chutes and spouts;
- visual acuity, both near and far, to read gauges, meters and recorders, and to observe kiln or roaster operation;

- capacity for working in the presence of extreme heat, and noise, vibration, odours, dusts and gases resulting from processing operations;
- capacity for working in conditions where there are physical hazards such as exposure to hot materials, moving mechanical parts and lead poisoning.

Workers in Cluster A also require:

- spatial perception to observe equipment in operation or flow of material in process and make necessary adjustments;
- ability to climb steps and ladders between floor levels to observe operating equipment and processes.

CHAPTER 8115

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- previous related work experience and on-the-job training, ranging

from four months to two years, depending on the complexity of the occupation.

B

- seven to nine years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in Cluster B may advance to more skilled occupations in Cluster A, and those in Cluster A may advance within that cluster. Experienced workers in this chapter with supervisory potential may advance to 8110-122 FOREMAN, MELTING AND ROASTING OCCUPATIONS, MINERAL ORES. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations within their cluster, or to appropriate occupations requiring similar skills in Minor Group 811, MINERAL ORE TREATING OCCUPATIONS; and Chapters 8131, METAL SMELTING, CONVERTING AND REFINING FURNACEMEN; and 8151, FURNACEMEN AND KILNMEN: CLAY, GLASS AND STONE.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects of a mechanical nature.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

B

Interests

- dealing with things and objects;
- routine, concrete and organized work;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, MINERAL ORE TREATING

WORK PERFORMED

This chapter includes occupations concerned with performing routine evaluation tests and other quality-control activities in mineral-ore treating. Worker functions include: comparing physical characteristics of minerals and ore samples to specified standards; computing percentages of minerals contained in ore samples; compiling inspection and test results; manipulating tools and specialized equipment to take samples, perform tests, and inspect or grade materials; and handling samples of ore and mineral products. Work activities include: collecting samples from various plant or mine locations; dumping materials into machines that crush, grind, separate or blend them preparatory to testing; testing materials to determine moisture content, hardness and other physical characteristics; inspecting materials for colour, texture, quality and size; and grading mineral products according to specifications.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8116-110	RADIOMETRIC-COUNTER OPERATOR (mining & quarrying; non-ferrous metal)	3	5	8116-118	IRON-PELLET-HARDNESS TESTER (iron & steel)	3	4
8116-114	ORE-SAMPLE TESTER (mining & quarrying)	3	4	8116-122	ELECTROLYTIC-CELL CONTROL MAN (non-ferrous metal)	3	4
8116-116	MINERAL SAMPLER (mining & quarrying; non-metal. min. prod., n.e.c.)	3	4	8116-126	COKE INSPECTOR (non-ferrous metal)	3	4
				8116-130	MICA CLASSIFIER (non-metal. min. prod., n.e.c.)	2	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
3	4	<u>4</u>	4	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	4	L 47	I 5	3-2	5-3	19	0Y2	
4					3	<u>3</u>		<u>4</u>		5		I 367					

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand inspecting, testing, grading or sampling procedures, and the underlying principles of mineral ore treating, and reasoning ability to make judgments regarding the quality of products and materials;
- numerical ability to calculate the amount of mineral or metallic ore in samples and computing the moisture content of mineral samples;
- form perception for 8116-126 COKE INSPECTOR to detect irregularly sized and poorly carbonized coke passing on conveyor, and for 8116-130 MICA CLASSIFIER to detect rough spots and other defects in mica sheets and strips;
- eye-hand-finger co-ordination and finger dexterity to operate testing

equipment and to use measuring instruments such as micrometers and gauges;

- manual dexterity to handle materials, tools, sampling equipment and measuring instruments;
- near visual acuity to inspect products and materials for defects, and to read measuring instruments;
- colour vision to assist in grading mica sheets and strips;
- capacity to work in conditions of noise, vibration, dusts, fumes and odours, caused by testing and processing operations;
- adaptability to working in conditions where there is exposure to hazards, such as moving machinery parts and hot materials, in processing areas.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;

- two months to one year of related experience and on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers with supervisory potential may advance to 8110-114 FOREMAN, INSPECTING, TESTING AND GRADING OCCUPATIONS, MINERAL ORES. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

There are no normal transfer patterns for workers in this chapter, however, with limited additional training, some may transfer to occupations in Chapters 8146, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, METAL PROCESSING; and 8156, INSPECTING, TESTING AND GRADING OCCUPATIONS: CLAY, GLASS AND STONE PROCESSING AND FORMING.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- activities that are basically non-social in nature, carried on in relation to mineral-ore processing and quality-control techniques;
- routine, concrete and organized work.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example, measuring thickness of mica sheets using micrometer;
- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, MINERAL ORE TREATING

WORK PERFORMED

This chapter includes occupations concerned with labouring and elemental work in the preparation of crude mineral ores for direct use or further processing. The primary worker function includes handling items such as hoses, shovels, hand trucks and hand tools to perform routine tasks. Work activities include: opening and closing valves and moving levers to pump tailings from mill or smelter to waste basin or underground reservoir, or to regulate flow of mineral ores to grading screens; cleaning equipment, bins and work areas; loading and unloading materials onto or from freight cars or trucks and shovelling scrap or spillage onto conveyors.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8118-110	TAILINGS LABOURER (iron & steel; non-ferrous metal)	1	2	8118-114	LABOURER, ORE PROCESSING (iron & steel; non-ferrous metal)	1	1
				8118-118	SALT-SCREENING LABOURER (mining & quarrying)	1	1

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	H-M 34	B 457	1	2-1	13	23
	5	4						<u>4</u>								

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple work instructions;
- eye-hand co-ordination to regulate the flow of materials by turning valves or moving levers;
- manual dexterity to use tools, shovels and brooms;
- physical fitness and strength to perform medium to heavy work requiring lifting of materials weighing up to one hundred pounds, and to perform tasks such as dragging water hoses and breaking slag using sledge hammers;

- agility to stoop and crouch to perform such activities as shovelling spillage and connecting pipes and hoses;
- ability to work while exposed to loud, steady noises from ore-treating machinery and equipment;
- capacity to work with wet material, and in damp conditions is required for 8118-110 TAILINGS LABOURER;
- capacity for working while exposed to dusts, fumes, gases and odours created by ore-treating operations, is required for 8118-114 LABOURER, ORE PROCESSING.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specific educational level;
- from a short demonstration to one month of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs and advancement is normally to appropriate occupations requiring similar skills in Minor Group 811, MINERAL ORE TREATING OCCUPATIONS.

Transfer

Workers in this chapter may transfer to other labouring and elemental occupations in this chapter, or to occupations that require similar skills in materials processing, for example see Chapter 8148, OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, METAL PROCESSING.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- routine, concrete and organized tasks.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

MINERAL ORE TREATING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities in mineral ore treating, such as operating and tending reduction cells, filters, dryers and other equipment to smelt aluminum oxide into aluminum; compressing metal dust or crushed ore into briquettes; forming mica plates; processing refined salt; and shredding and dehydrating peat moss.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Aluminum Ore Treating Occupations</i>																		
8119-110	ALUMINUM-OXIDE CONTROL MAN (non-ferrous metal)	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	3	L 47	I 367	3	5	91	Y0
8119-114	ALUMINUM-BRIQUETTING EQUIPMENT OPERATOR (non-ferrous metal)	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 57	3	5	91	Y0
8119-118	ALUMINA-RECOVERY-EQUIPMENT OPERATOR (non-ferrous metal)	3	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	4	3	5	5	L 2456	I 367	3	5	91	Y0
8119-122	CRYOLITE-RECOVERY-EQUIPMENT OPERATOR (non-ferrous metal)	3	4	3	<u>3</u>	<u>4</u>	4	<u>4</u>	<u>3</u>	<u>3</u>	5	3	M 4	I 4567	3	5	91	Y0
8119-124	ALUMINUM-CELL TENDER (non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4	L 47	I 367	3	4	91	Y0
8119-126	ALUMINUM-CELL RECONDITIONER (non-ferrous metal)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 234	I 3567	2	4	91	2Y
8119-130	CARTRIDGE-FLUX MAKER (non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	H 34	I 367	3	3	91	2Y
8119-134	FLUX-MIXING-MACHINE TENDER (non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 4	I 5	2	4	931	23Y
8119-138	SMELT-HOUSE-MIXER TENDER (non-ferrous metal)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	L 47	I 457	2	4	931	23Y
8119-146	ALUMINA-RECOVERY-EQUIPMENT OPERATOR HELPER (non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 23456	I 567	2	3	931	23Y
8119-150	ALUMINUM-SLURRY-PUMP TENDER (non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4	M 24	I	2	3	319	23Y
8119-154	POTLINING-MIXER TENDER (non-ferrous metal)	4	4	4	4	4	5	<u>4</u>	4	<u>3</u>	4	5	M 4	I 57	2	3	319	23Y
<i>Mica Treating Occupations</i>																		
8119-174	MICA SPLITTER (non-metal. min. prod., n.e.c.)	4	4	4	4	<u>3</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 4	I 67	3	3	931	2Y
8119-178	MICA TRIMMER (non-metal. min. prod., n.e.c.)	4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	<u>4</u>	3	L 47	I 67	3	3	931	20Y
8119-182	MICA-SHEET LAMINATOR (non-metal. min. prod., n.e.c.)	4	4	4	4	4	4	<u>3</u>	4	<u>3</u>	5	5	L 4	I 7	2	3	931	23Y
8119-186	MICA-LAMINATING-MACHINE TENDER (non-metal. min. prod., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I 7	2	3	319	23Y
8119-190	MICA-SHEET SALVAGER (non-metal. min. prod., n.e.c.)	4	4	4	<u>4</u>	4	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I 67	2	3	319	23Y
8119-194	MICA-PRESS TENDER (non-metal. min. prod., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	L 4	I 7	2	2	319	23
8119-198	MICA-PULVERIZER TENDER (non-metal min. prod., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	3	5	M 34	I 7	2	2	319	23Y
<i>Salt Treating Occupations</i>																		
8119-218	SALT-FORTIFYING-EQUIPMENT OPERATOR (mining & quarrying)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	4	M 247	I	2	3	931	2Y

GROUP 8119

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
8119-222	COARSE-SALT-EQUIPMENT OPERATOR (mining & quarrying)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4	M 4	I 57	2	3	931	2Y
8119-226	SALT-COMPRESSOR TENDER (mining & quarrying)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	H 34	I	2	2	319	23
8119-230	SALT-SLAB-FORMING-MACHINE TENDER (mining & quarrying)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I 57	2	2	319	23
Peat Moss Treating Occupations																		
8119-250	DEHYDRATOR TENDER, PEAT MOSS (mining & quarrying)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 4	I 5	3	3	931	2Y
8119-254	WATER EXTRACTOR, PEAT MOSS (mining & quarrying)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 24	I 5	2	2	319	23
Other Mineral Ore Treating Occupations																		
8119-268	PERLITE-EXPANDER OPERATOR (non-ferrous metal)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	3	<u>4</u>	<u>3</u>	<u>4</u>	5	4	L 47	I 3567	4	7	91	Y0
8119-274	BRIQUETTING-MACHINE OPERATOR (iron & steel; non-ferrous metal)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I 57	3	5	91	Y0
8119-278	DRIER OPERATOR (mining & quarrying)	3	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	4	4	M 47	I 567	3	4	91	Y0
8119-282	ORE-PROCESSING-PIPE TURNER (iron & steel; non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	H 34	B 457	2	3	931	2Y
8119-284	CARNALITE-FLUX MAKER (non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	M 4	I 6	2	3	931	23Y
8119-286	FILTER-LEAVES CLEANER (iron & steel; non-ferrous metal)	4	4	4	<u>4</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 4	I 6	2	3	931	23Y
8119-290	DUST-COLLECTOR TENDER (iron & steel)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I 57	2	3	319	23Y
8119-294	SINTER-FEEDING-MACHINE TENDER (iron & steel)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 4	I 67	2	3	319	23Y
8119-298	SLAG-PELLETIZER TENDER (iron & steel)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I 3567	2	3	931	23Y
8119-302	SLUG-PRESS TENDER (chem., n.e.c.; non-ferrous metal)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	M 4	I 567	2	3	931	23Y
8119-306	DUST REMOVER (iron & steel; non-ferrous metal)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I 7	2	2	319	23
8119-310	FLUE-DUST SETTLER (iron & steel; non-ferrous metal)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	M 4	I 457	2	2	31	23

METAL SMELTING, CONVERTING AND REFINING FURNACEMEN

WORK PERFORMED

This chapter includes occupations concerned with converting and refining metal, melting metal for casting, and heating metal for rolling, forging and pressing as a stage in the production of semi-finished or finished metal stock or products. Worker functions include: controlling the operation, charging and tapping of furnaces used to produce and process metals and alloys; comparing colour, fluidity and appearance of molten metal to determine progress of operation; manipulating oxygen lances, tongs, ladles, bars and other furnacemens' tools; tending furnaces that reclaim scrap metal; and handling additives, slag and refractory materials. Work activities include: calculating amounts of materials required for charging; moving controls to start, stop, regulate or tilt equipment that loads, melts or heats materials; observing panelboard indicators and adjusting controls to maintain conditions within specified limits; obtaining metal samples for laboratory analysis; skimming impurities from surface of molten metal; tapping molten metal from furnaces or reduction pots; and chipping solidified slag and metal from furnace walls.

LIST OF OCCUPATIONAL TITLES

A							
		GED	SVP			GED	SVP
8131-110	BESSEMER-CONVERTER OPERATOR (iron & steel; non-ferrous metal)	4	7	8131-138	MIXER OPERATOR, MOLTEN METAL (iron & steel; non-ferrous metal)	3	5
8131-114	BLAST-FURNACE OPERATOR (iron & steel)	4	7	8131-142	HEATER, METAL (any ind.)	3	5
8131-118	OPEN-HEARTH-FURNACE OPERATOR (iron & steel)	3	7	8131-146	CUPOLA TENDER (iron & steel)	3	5
8131-122	OXYGEN-FURNACE OPERATOR (iron & steel)	3	7	8131-150	ALUMINUM-POWDER MAKER (non-ferrous metal)	3	5
8131-126	FURNACE OPERATOR (iron & steel; non-ferrous metal)	3	6	8131-154	CHARGING-MACHINE OPERATOR (iron & steel)	3	5
8131-130	SMELTING FURNACE OPERATOR (non-ferrous metal)	3	6	8131-158	KETTLEMAN, LEAD (non-ferrous metal)	3	4
B							
		GED	SVP			GED	SVP
8131-134	BLAST-FURNACE TAPPER (iron & steel)	3	6	8131-166	FURNACE TAPPER (iron & steel; non-ferrous metal)	2	4
8131-162	FURNACE CHARGER (non-ferrous metal)	3	4	8131-170	OPEN-HEARTH-FURNACE HELPER (iron & steel)	2	4
C							
		GED	SVP			GED	SVP
8131-178	METAL RECLAIMER (explosives)	2	3	8131-198	HEATER, METAL, HELPER (any ind.)	2	3
8131-182	SCRAP REMELTER (non-ferrous metal)	2	3	8131-202	OPEN-HEARTH-FURNACE WORKER (iron & steel)	2	3
8131-186	FURNACE-OPERATOR HELPER (iron & steel; non-ferrous metal)	2	3	8131-206	CUPOLA CHARGER (iron & steel)	2	2
8131-190	MIXER OPERATOR HELPER, MOLTEN METAL (iron & steel)	2	3	8131-210	FURNACE CHARGER (iron & steel)	2	2
8131-194	BLAST-FURNACE-TAPPER HELPER (iron & steel; non-ferrous metal)	2	3				

N.B. Occupation 8131-174 PRECIOUS METAL MELTER (non-ferrous metal) has been transferred, for Volume II purposes, to Chapter 8149, METAL PROCESSING AND RELATED OCCUPATIONS, N.E.C.

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	L-M 4567	I 3567	4-3	7-4	91	Y0
				<u>4</u>	<u>4</u>	5	<u>4</u>			5	4						
B	3	4	4	4	4	5	<u>3</u>	4	<u>3</u>	4	4	M-H 47	I 3567	3-2	6-4	931	2Y
	4			<u>3</u>		4				<u>3</u>	5						
C	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M-H 3457	I 3567	2	3-2	319	23
			4			4				4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply metal smelting, converting or refining procedures, and in some occupations, reasoning ability to judge progress of furnace operations;
- eye-hand co-ordination and manual dexterity to operate furnace equipment and charging-machine controls, and use tools such as tapping bars and tongs;
- sufficient strength to perform light to heavy work, requiring the manipulation of furnace controls; the lifting of materials, ingots, tools and other items weighing up to one hundred pounds; the breaking up and removal of solidified slag; or the scraping and chipping of material from furnace and ladle walls;
- ability to stoop and crouch in order to handle materials, break up slag and use furnace tools;
- ability to give and receive verbal instructions and information;
- near visual acuity to observe gauges and recorders, to read pyrometers, and to observe condition of metal;
- capacity to work while exposed to extreme heat, noise, fumes, odours, dusts and dirty conditions in furnace areas;
- adaptability to working where there is a variety of hazards, such as exposure to molten metal, gases, falls and strains.

Additionally, for Cluster A:

- spatial perception to control the operation of equipment in which very large amounts of molten metal must be rotated, tilted and poured, often from a remote location;
- form perception to discern pertinent detail in appearance of molten materials and metal stock;
- colour discrimination, for example, to determine when to tap furnace by colour-change in molten metal, and to determine quality of molten metal flowing in runners during casting operations.

Additionally, for Cluster B:

- spatial perception when charging or tapping furnaces and filling molds with molten metal, to control amounts of ingredients or molten metal products;
- eye-hand-foot co-ordination to drive industrial truck, power-shovel or car-dumping machine.

Additionally, for Cluster C:

- form perception, for example, to discern pertinent detail in appearance of molten metal in scrap remelting furnace in order to skim impurities from surface.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to eleven years of general education;
- six months to three years of related experience and on-the-job training, depending on the complexity of the occupation.

B

- eight to ten years of general education;
- four to eighteen months of related experience and on-the-job training.

C

- six to eight years of general education;
- one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for experienced workers in this chapter is normally to higher skilled occupations within their cluster, or progressively with additional training, to more skilled occupations in other clusters. Those with supervisory potential may advance to 8130-110 FOREMAN, FURNACEMEN, METAL. See also Chapter 990, FOREMEN, OCCUPATIONS for qualifications profiles.

Transfer

Workers in this chapter may transfer to occupations within their own cluster that require similar skills. With some additional training, transfer may also be to appropriate occupations in Chapters 8115, MELTING AND ROASTING OCCUPATIONS, MINERAL ORES; and 8151, FURNACEMEN AND KILNMEN: CLAY, GLASS AND STONE.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to metal smelting, converting or refining processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, for example, determining temperature of metal using pyrometer.

B

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- routine, concrete and organized tasks;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

C

Interests

- routine, concrete and organized tasks;
- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

METAL HEAT-TREATING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with altering the physical properties of metals or metal objects by heating, cooling or chemically treating to anneal, harden, temper or relieve internal stresses. Worker functions include: operating and controlling metal heat-treating furnaces and quenching equipment; comparing information about workpieces and types of heat treatment required; setting up equipment for specified heat treatment of metal products; and tending furnace equipment and conveyor systems. Work activities include: studying specifications, work orders and charts to obtain information such as temperature of furnace, duration and sequence of treatment, nature of quenching media, and colour and hardness of treated metal; placing metal products on conveyors or into furnaces; adjusting automatic feed and temperature; reading gauges, pyrometers and other indicating devices; and quenching or cooling metal according to the desired treatment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8133-110	FLAME-HARDENING-MACHINE SET-UP MAN (mach., weld. & forg.)	4	6	8133-118	INDUCTION-MACHINE SET-UP MAN (mach., weld. & forg.)	3	5

B

		GED	SVP			GED	SVP
8133-114	HEAT TREATER, ALL ROUND (mach., weld. & forg.)	3	6	8133-134	CASE HARDENER (mach., weld. & forg.)	3	4
8133-122	QUENCHING-UNIT OPERATOR (mach., weld. & forg.)	3	5	8133-138	HARDENER (mach., weld. & forg.)	3	4
8133-126	ANNEALER (mach., weld. & forg.)	3	5	8133-142	TEMPERER (mach., weld. & forg.)	3	4

C

		GED	SVP			GED	SVP
8133-146	METAL BLUER (mach., weld. & forg.)	3	3	8133-154	INDUCTION-MACHINE TENDER (mach., weld. & forg.)	2	3
8133-150	FLAME-HARDENING-MACHINE TENDER (mach., weld. & forg.)	2	3	8133-158	JEWELLERY ANNEALER (jewellery & precious metal prod.)	2	3
				8133-162	HEAT-TREATER HELPER (mach., weld. & forg.)	2	2

N.B. Occupations 8133-130 SOAKING-PIT-FURNACE OPERATOR (mach., weld. & forg.) and 8133-166 RIVET HEATER (any ind.) have been transferred, for Volume II purposes, to Chapters 8131 METAL SMELTING, CONVERTING AND REFINING FURNACEMEN and 8793 STRUCTURAL-METAL ERECTORS respectively.

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	M 347	I 3567	4-3	6-5	91	0Y1
B	<u>3</u>	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	4	M 347	I 3567	3	6-4	91	Y0
		3		<u>3</u>						4	3					913	
C	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4	L-M 47	I 3567	3-2	3-2	913	23Y
						5	<u>3</u>				<u>3</u>						23

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand heat-treating methods and the properties of metals, and ability to carry out detailed written or oral instructions;
- form perception to discern pertinent detail in appearance of parts and materials;
- eye-hand co-ordination and manual dexterity to operate and adjust equipment controls, and to use tongs when handling heated parts;
- colour discrimination to determine slight differences in colour of gas flames or heated metal when estimating temperatures;
- sufficient strength to perform light to medium work requiring the lifting of parts, materials, trays and other items weighing up to fifty pounds;
- ability to stoop and crouch when picking up articles, and setting up equipment;
- near-visual acuity to observe dials and gauges, read pyrometers and

hardness testers, and examine workpieces for conformance to specifications;

- capacity to work while exposed to extreme heat, noise, odours and gases from furnaces and nearby equipment;
- adaptability to working conditions where there is exposure to burns and fumes.

Additionally, for workers in Cluster A:

- spatial perception to visualize and understand the functioning and relationship of component parts in order to set up and adjust heat-treating equipment;
- finger dexterity to set up and adjust flame-hardening or induction machines.

Additionally for Cluster B:

- spatial perception to visualize internal stresses in metal objects and to make adjustments to regulate operation of heat-treating equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to eleven years of general education; and
- previous experience as a machine tender or operator in hardening, tempering and annealing metal, and on-the-job training, ranging from six to fifteen months.

B

- nine or ten years of general education; and
- previous experience as a helper or less skilled worker in heat-treating work, and on-the-job training ranging from four months to two years.

C

- seven to nine years of general education; and
- one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Some workers in this chapter may, with additional training, advance to higher skilled occupations within their cluster, or from Cluster C to B and from B to A. Others may advance to appropriate occupations requiring similar basic skills in Minor Group 813/814, METAL PROCESSING AND RELATED OCCUPATIONS. Those with supervisory potential may advance to 8130-114 FOREMAN, HEAT-TREATING OCCUPATIONS, METAL. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their cluster, or to appropriate occupations in Minor Group 813/814, METAL PROCESSING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- work which is basically non-social in nature and is carried on in relation to processes and techniques;
- dealing with things and objects;

Additionally, for Clusters B and C:

- routine, concrete and organized work.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change, for example, machine set-up work.

B

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the performance of duties only under specific instruction, allowing little or no room for independent action or judgment in solving job problems;
- the precise attainment of set limits, tolerances or standards.

METAL ROLLING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with shaping, thinning and elongating metal by passing it between smooth surfaces or grooved rotating rolls which exert a continuous compressive force. Worker functions include: operating or tending equipment to roll metal to specified size and shape; manipulating tools to assemble roll stands and tongs to move and guide metal; comparing rolled products to specified standards; and computing draft and roll speed required to reduce metal to specified dimensions. Work activities include: installing aligning and securing rolls, guides, stops and other parts to set up equipment; moving controls to start, stop and regulate rolling operations; observing operations and recording instruments, and making adjustments to maintain conditions within specified limits; guiding hot metal shapes from one set of rolls to another; measuring rolled products for conformance to specifications; and examining them for cracks, pits and other defects.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8135-110	ROLLING ATTENDANT (iron & steel)	4	6	8135-146	ROLLER, SEAMLESS TUBE (iron & steel)	3	5
8135-114	HOT-STEEL ROLLER (iron & steel)	3	7	8135-150	SCREWDOWN OPERATOR (iron & steel; non-ferrous metal)	3	5
8135-118	ROLL SETTER (iron & steel)	3	6	8135-154	STRAIGHTENING-ROLL OPERATOR (any ind.)	3	5
8135-122	ROLLING-MILL OPERATOR (non- ferrous metal)	3	6	8135-158	GUIDE SETTER (iron & steel)	3	5
8135-126	ROUGHING-MILL OPERATOR (iron & steel; non-ferrous metal)	3	6	8135-160	SCALPING OPERATOR (non- ferrous metal)	3	5
8135-130	COLD-STEEL ROLLER (iron & steel)	3	6	8135-162	STEAM-CONTROL OPERATOR (iron & steel; non-ferrous metal)	3	5
8135-134	FINISHER (iron & steel)	3	6	8135-164	UTILITY MAN, ROLLING MILL (iron & steel; non- ferrous metal; wire prod.)	3	5
8135-138	SPEED OPERATOR (iron & steel)	3	5				
8135-142	PIERCING-MILL OPERATOR (iron & steel; non-ferrous metal)	3	5				

B

		GED	SVP			GED	SVP
8135-166	REELING-MACHINE OPERATOR (iron & steel)	3	4	8135-190	ROLLING-MILL OPERATOR HELPER (iron & steel; non- ferrous metal)	2	4
8135-170	COILER OPERATOR (iron & steel)	3	4	8135-194	CATCHER (iron & steel)	2	3
8135-174	JEWELLERY STRIP ROLLER (jewellery & precious metal prod.)	3	4	8135-198	PLUGGER (iron & steel)	2	3
8135-178	MANIPULATOR (iron & steel)	3	4	8135-202	BED TENDER (iron & steel)	2	3
8135-182	ROUGHING-TABLE TENDER (iron & steel)	3	4	8135-206	COILER, METAL ROLLING (non- ferrous metal)	2	3
8135-186	TUBING-MACHINE TENDER (iron & steel; non-ferrous metal)	3	4	8135-210	SCALPING HELPER (non- ferrous metal)	2	3
8135-188	INGOT-BUGGY DRIVER (iron & steel)	2	4	8135-214	INGOT CLADDER (non- ferrous metal)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	L-M 3457	I 3567	4-3	7-4	91	Y0	
	<u>4</u>	3	<u>4</u>	<u>4</u>	<u>4</u>	5			<u>4</u>	4	5							
B	4	4	5	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	4	5	L-M 47	I 3567	3-2	4-3	319	2Y3	
			4				<u>4</u>			5								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand rolling practices and the properties of metal, and to carry out detailed work instructions;
- spatial perception, especially for operators, to visualize end products and understand the functioning and relationship of component parts in order to set up and adjust metal-rolling equipment;
- form perception to closely inspect rolled products for defects such as cracks, scratches and pits;
- eye-hand co-ordination and manual dexterity to operate equipment controls, to use hand tools, and to use tongs or prying bars to manipulate workpieces;
- sufficient strength to perform light to medium work, requiring the lifting of machine parts, tools and workpieces weighing up to fifty pounds, and the pushing and pulling of levers to operate equipment;
- ability to stoop and crouch when setting up equipment and lifting workpieces from floor level;
- capacity to give and receive verbal instructions or information while working against a background of noise;

- visual acuity, both near and far, to read gauges and meters, to observe the movement of material through rolling mills from a distance, to measure rolled product, and to examine product for defects;
- colour vision, to recognize indicator lights on control panels, and to estimate the temperatures of heated metal;
- capacity to work while exposed to extreme heat from workpieces and furnaces, noise from rolling equipment, and fumes, odours, dirt and grease;
- adaptability to working where there is exposure to a variety of hazards, such as hot metal, moving mechanical parts, strains and falls.

Workers in Cluster A also require:

- numerical ability to calculate measurements and speeds quickly and accurately;
- finger dexterity to operate dials and switches, and to use measuring instruments such as micrometers and calipers.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to eleven years of general education;
- previous related experience in other metal rolling occupations such

as helpers, catchers or manipulators, and on-the-job training ranging from six months to three years, depending on the complexity of the occupations.

B

- seven to ten years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may advance progressively, with additional training, to occupations within their cluster that require higher skills, or from Cluster B to A. Advancement may also be to appropriate inspecting and testing occupations in Chapter 8146, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, METAL PROCESSING. Those with supervisory potential may also advance to 8130-134 FOREMAN, METAL ROLLING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their cluster, or to other appropriate occupations in Minor Group 813/814, METAL PROCESSING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried out in relation to processes, machines and techniques;
- dealing with things and objects of a mechanical or structural nature.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, such as examining rolled products for adherence to specifications.

B

Interests

- routine, concrete and well-organized work;
- dealing with things and objects of a mechanical or structural nature;
- non-social work carried out in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards;
- working under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

MOULDING, COREMAKING AND METAL CASTING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with making moulds and cores, and filling moulds with molten or powdered metal to form ingots, castings and parts of various shapes and sizes. Worker functions include: working precisely to close tolerances when making patterns, moulds or cores by hand; operating or tending a variety of machines and equipment that melt and cast metal; manipulating tools to prepare moulds, cores or casting equipment for use; setting-up die-casting, sand-moulding or core-making machines; and comparing resultant products with drawings and specifications to ensure conformance to standards. Work activities include: forming sand moulds and cores by hand or machine; melting metal in furnaces, kettles or other equipment; casting parts, ingots and other items by pouring molten metal into moulds, or by using casting wheel, die-casting, continuous-casting or centrifugal-casting machines; compressing metallic powders into parts using sintering press; and removing cast items from moulds.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8137-110	PATTERN MOULDER (non-ferrous metal)	4	7	8137-122	MOULDING-AND-COREMAKING-MACHINES SET-UP MAN (iron & steel; non-ferrous metal)	4	6
8137-114	SAND MOULDER (iron & steel; non-ferrous metal)	4	7	8137-126	COREMAKER (iron & steel; non-ferrous metal)	3	6
8137-118	DIE-CASTING-MACHINE SET-UP MAN (non-ferrous metal)	4	6	8137-130	MOULDER, BENCH (jewellery & precious metal prod.)	3	6

B

		GED	SVP			GED	SVP
8137-134	SHOT DROPPER (explosives)	3	5	8137-160	STARTING-SHEET MAKER (non-ferrous metal)	3	4
8137-138	CASTING OPERATOR (non-ferrous metal)	3	5	8137-162	AMMUNITION CASTER (non-ferrous metal)	3	4
8137-142	CONTINUOUS-CASTING-MACHINE OPERATOR (iron & steel; non-ferrous metal)	3	5	8137-166	ANODE-PRESS OPERATOR (non-ferrous metal)	3	4
8137-146	MACHINE MOULDER (iron & steel; non-ferrous metal)	3	5	8137-170	BULLET-SLUG-CASTING-MACHINE OPERATOR (non-ferrous metal)	3	4
8137-150	CASTER (non-ferrous metal)	3	4	8137-174	DIE-CASTING-MACHINE OPERATOR (non-ferrous metal)	3	4
8137-154	CASTING-MACHINE OPERATOR, AUTOMATIC (electric. equip.)	3	4	8137-178	MOULDING-SAND MIXER (iron & steel; non-ferrous metal)	3	4
8137-158	CASTING-WHEEL OPERATOR (non-ferrous metal)	3	4				

C

		GED	SVP			GED	SVP
8137-182	METAL POURER (iron & steel; non-ferrous metal)	3	4	8137-198	METAL-FRAME MOULDER (non-ferrous metal)	2	4
8137-186	LOST-WAX CASTER (iron & steel; non-ferrous metal)	3	4	8137-202	METAL-POURER HELPER (iron & steel; non-ferrous metal)	2	4
8137-190	MOULD SETTER (electric. equip.)	3	4	8137-206	COREMAKER, PIPE (iron & steel; non-ferrous metal)	2	4
8137-194	CENTRIFUGAL-CASTING-MACHINE TENDER (iron & steel)	3	4	8137-210	MOULD CLOSER (iron & steel; non-ferrous metal)	2	4

		GED	SVP			GED	SVP
8137-214	SAND-SLINGER OPERATOR (iron & steel; non-ferrous metal)	2	3	8137-242	CASTER HELPER (non-ferrous metal)	2	2
8137-218	LEAD CASTER, MANUAL (electric. equip.)	2	3	8137-246	CORE SETTER (iron & steel; non-ferrous metal)	2	2
8137-220	NOZZLE-AND-SLEEVE MAN (non-ferrous metal)	2	3	8137-250	METAL-FRAME-MOULDER HELPER (non-ferrous metal)	2	2
8137-222	COREMAKER, MACHINE (iron & steel; non-ferrous metal)	2	3	8137-254	CORE EXTRUDER (iron & steel; non-ferrous metal)	2	2
8137-224	LIME MAN (iron & steel)	2	3	8137-258	CORE-OVEN TENDER (iron & steel; non-ferrous metal)	2	2
8137-226	MOULDER, LEAD INGOT (non-ferrous metal)	2	3	8137-262	DIE-CASTING-MACHINE TENDER (non-ferrous metal)	2	2
8137-230	RECLAMATION MAN, METAL (non-ferrous metal)	2	3	8137-266	SHELL-MOULD BONDER (iron & steel; non-ferrous metal)	2	2
8137-234	SINTERING-PRESS TENDER (iron & steel; non-ferrous metal)	2	3	8137-270	SHELL MOULDER (iron & steel)	2	2
8137-236	CORE-PIPE EXTRACTOR (iron & steel)	2	3	8137-272	METAL-CHARGE WEIGHER (iron & steel; non-ferrous metal)	2	2
8137-238	SOLDER MAKER (non-ferrous metal)	2	3	8137-274	MOULDMAN (iron & steel)	2	2
8137-240	ABRASIVE-WHEEL BUSER (non-ferrous metal)	2	2	8137-278	CASTING-OPERATOR HELPER (non-ferrous metal)	2	2
				8137-282	CASTING-WHEEL-OPERATOR HELPER (non-ferrous metal)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 347	I 3567 I 67	4-3	7-6	190	0Y	
B	3	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M-H 47	I 3567	3	5-4	139	20Y	
C	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	4	5	M-H 47	I 3567	3-2	4-2	139	23Y	
			5		<u>3</u>	4	4			5								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand characteristics of metal, and to follow sand moulding, coremaking or metal casting instructions;
- spatial perception to visualize finished parts from drawings and patterns, and to set up machines and equipment to cast parts according to specifications;
- form perception to examine moulds, cores and castings for conformance to specified standards;
- eye-hand co-ordination and manual dexterity to operate machine controls, and to use hand tools and measuring instruments;
- sufficient strength to perform work ranging from light to heavy depending on the job involved; to lift and handle tools, moulds, patterns and castings; and to shovel sand used to make moulds and cores;

- ability to stoop, crouch, or kneel to shovel sand, form sand moulds, and pick up or lay down objects at floor level;
- near visual acuity to examine and measure moulds, cores and castings, and to read machine gauges;
- capacity to work in generally unpleasant conditions such as dusts, fumes, odours, machinery noise and extreme heat from furnaces and molten metal;
- adaptability to working where there are a variety of hazards, such as exposure to molten metal, explosions, lead poisoning or physical strains.

Additionally, for Cluster A:

- finger dexterity to use hand tools and measuring instruments.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

- **A**
- nine to eleven years of general education;
- an apprenticeship program of from two to four years for 8137-110

PATTERN MOULDER, 8137-114 SAND MOULDER and 8137-126 COREMAKER;

- one to two years of related experience and on-the-job training for the remaining occupations.

B

- eight to ten years of general education;
- four months to one year of related experience and on-the-job training.

C

- seven to ten years of general education;
- one to six months of related experience and on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in Clusters B or C may advance to higher-skilled occupations within this chapter; for example, from 8137-202 METAL-POURER HELPER to 8137-182 METAL POURER, and from 8137-262 DIE-CASTING-MACHINE TENDER to 8137-118 DIE-CASTING-MACHINE SET-UP MAN. Experienced workers with potential for supervision, may advance to 8130-138 FOREMAN, MOULDING, COREMAKING AND METAL CASTING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their respective clusters. Transfer may also be to appropriate occupations requiring similar skills and limited additional training in Minor Group 813/814, METAL PROCESSING AND RELATED OCCUPATIONS, such as 8146-130 SAND TESTER, FOUNDRY and 8146-138 CASTING INSPECTOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects such as equipment, parts and hand tools;
- non-social activities, carried on in relation to moulding, coremaking and casting processes, machines and techniques.

Additionally, for Cluster A:

- activities leading to satisfaction from tangible results.

Additionally, for Clusters B and C:

- routine, concrete and organized duties.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria, for example, verifying machine setups using measuring instruments;
- the precise attainment of set limits, tolerances or standards.

B

- repetitive or short cycle operations, carried out according to set procedures or sequences;
- the evaluation of information against measurable or verifiable criteria, for example, verifying temperature of molten metal using pyrometer;
- the precise attainment of set limits, tolerances or standards.

C

- repetitive or short cycle operations, carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action in solving job problems;
- the precise attainment of set limits, tolerances or standards.

METAL EXTRUDING AND DRAWING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with drawing and extruding metal into semi-finished or finished products such as bars, tubing, rods, wire and structural sections. Worker functions include: operating and tending, extrusion presses, drawing machines and wire-insulating machines; manipulating tools and equipment to install, align and secure dies, mandrels, guides and other parts in machines; feeding materials into machines and offbearing products; and comparing and measuring finished products with specified standards. Work activities include: moving controls to start, stop and regulate the operation of equipment; and cleaning, lubricating and making minor repairs to equipment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8141-110	METAL-EXTRUDER OPERATOR (explosives; non-ferrous metal)	3	6	8141-126	WIRE DRAWER (jewellery & precious metal prod.; wire prod.)	3	5
8141-114	ROD DRAWER (iron & steel; non-ferrous metal)	3	5	8141-130	SHEATHING EXTRUDER (wire prod.)	3	4
8141-118	TUBE DRAWER (iron & steel; non-ferrous metal)	3	5	8141-134	METAL POINTER (iron & steel; non-ferrous metal)	3	3
8141-122	WELDING-ROD-EXTRUDER OPERATOR (wire prod.)	3	5	8141-142	CABLE INSULATOR (wire prod.)	3	3
				8141-146	WELDING-ROD-EXTRUDER TENDER (wire prod.)	3	3

B

		GED	SVP			GED	SVP
8141-138	DRAWER HELPER (non-ferrous metal)	2	4	8141-158	SHEATHING-EXTRUDER HELPER (wire prod.)	2	2
8141-150	WIRE-DRAWER HELPER (jewellery & precious metal prod.; wire prod.)	2	3	8141-162	WELDING-ROD-EXTRUDER HELPER (wire prod.)	2	2
8141-154	METAL-EXTRUDER-OPERATOR HELPER (non-ferrous metal)	2	2	8141-166	CABLE-INSULATOR HELPER (wire prod.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u> 4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u> <u>4</u>	<u>4</u>	<u>3</u>	4	5	M 4567	I 567	3	6-3	91	Y0 Y02	
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u> <u>4</u>	4	5	M-H 47	I 567	2	4-2	139 13	23Y 23	

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply instructions pertaining to metal extruding and drawing operations;
- form perception to detect deviations from standards in shapes of finished products;
- eye-hand co-ordination to operate machines and make necessary adjustments;

- manual dexterity to set up machines, operate controls, and handle parts, tools and workpieces;
- physical fitness and sufficient strength to perform medium to heavy work, requiring frequent lifting of dies, parts, reels and materials weighing up to fifty pounds, and to use hand tools to install and adjust parts;
- ability to give and receive verbal instructions or information;

CHAPTER 8141

- near visual acuity and depth perception to set up and adjust machines, and to measure and examine finished products;
- capacity to work while exposed to loud, steady noises from metal extruding or drawing equipment and other nearby machinery;
- adaptability to working where there are a variety of physical hazards, such as exposure to hot metal, moving mechanical parts, dusts and fumes.

Additionally, for Cluster A:

- spatial perception to visualize finished products from drawings and specifications;
- finger dexterity to operate control dials and switches, and to use measuring instruments such as rules, calipers and micrometers.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to ten years of general education;

- one month to two years of related experience as a helper and on-the-job training, depending on the complexity of the occupation.

B

- eight years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may, with some additional training, advance to more highly skilled occupations within their cluster. Helper occupations in Cluster B are considered as entry jobs and advancement normally is to operator or tender occupations in Cluster A. Those who have supervisory potential may advance to 8130-126 FOREMAN, METAL EXTRUDING AND DRAWING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their respective clusters. Transfer may also be to appropriate occupations requiring similar skills and limited additional training in Minor Group 813/814 METAL PROCESSING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- activities which are basically non-social in nature, carried on in relation to metal extruding or drawing machines and techniques;
- dealing with things and objects.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, for example, measuring finished workpieces for conformance to specifications.

B

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

PLATING, METAL SPRAYING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with applying protective, decorative or other coatings to metal stock or products, by such processes as electroplating, galvanizing, metal spraying or vacuum metallizing. Worker functions include: operating or tending plating or pickling tanks, coating machines, tumbling machines and spray equipment to treat metal surfaces; manipulating tools to install rolls, guides, spray nozzles and other components in equipment; working to close tolerances to ensure objects are coated to required degree; and comparing finished products to specified standards to ensure conformance to specifications. Work activities include: mixing coating solutions or materials; cleaning surfaces of objects or materials prior to coating; placing or feeding articles in processing tanks or equipment; and moving controls to start, stop and regulate processes.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8143-110	JEWELLERY COVERER (jewellery & precious metal prod.)	3	6	8143-126	COATER OPERATOR (metal stamp., press. & coat.)	3	5
8143-114	ELECTROPLATER, METAL (metal stamp., press. & coat.)	4	5	8143-130	ELECTROGALVANIZER (metal stamp., press. & coat.)	3	5
8143-118	CYLINDER PLATER-GRINDER (mech. equip., n.e.c.; metal stamp., press & coat.)	3	5	8143-134	CORROSION-RESISTANT-METAL SPRAYER (metal stamp., press. & coat.)	3	5
8143-122	PICKLER OPERATOR (any ind.)	3	5	8143-138	METAL-SPRAY OPERATOR (metal stamp. press. & coat.)	3	5

B

		GED	SVP			GED	SVP
8143-142	ELECTROLESS PLATER (metal stamp., press. & coat.)	3	4	8143-174	FIREARMS FINISHER (metal stamp., press. & coat.)	2	3
8143-146	ELECTROPLATER, PHONOGRAPH MATRICES (metal stamp., press. & coat.)	3	4	8143-178	METAL DIPPER (metal stamp., press. & coat.)	2	3
8143-150	GALVANIZER, HOT DIP (metal stamp., press. & coat.)	3	4	8143-182	TUMBLING-MACHINE TENDER (metal stamp., press. & coat.)	2	3
8143-154	SHERARDIZER (metal stamp., press. & coat.)	3	4	8143-184	ELECTRO-FORMER (metal stamp., press. & coat.)	2	3
8143-158	WIRE-COATING TENDER, METAL (metal stamp., press. & coat.)	3	4	8143-186	PICKLER-OPERATOR HELPER (any ind.)	2	3
8143-162	ANODIZER (metal stamp., press. & coat.)	2	4	8143-190	METAL-SPRAY TENDER (metal stamp., press. & coat.)	2	2
8143-166	ELECTROLYTIC-STRIPPING-TANK TENDER (metal stamp., press. & coat.)	2	3	8143-194	VACUUM-METALLIZER TENDER (metal stamp., press. & coat.)	2	2
8143-170	ELECTROPLATER, PRODUCTION (metal stamp., press. & coat.)	2	3	8143-198	PLATING-ROOM HELPER (metal stamp., press. & coat.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	4		M 47	I 3567	4-3	6-5	91	0Y 0Y1
		4	4	4	<u>2</u>	5		<u>3</u>		4	3							
B	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	5		L-M 47	I 34567	3-2	4-2	913	Y23
	3				<u>4</u>	5	<u>3</u>			4	4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand metal plating, spraying or related operations, and reasoning ability to make judgments regarding the quality of finished products;
- form perception to examine finished products for defects;
- eye-hand co-ordination and manual dexterity to use hand tools and measuring instruments and to operate and adjust equipment;
- sufficient strength to perform light to medium work requiring the lifting of parts and materials weighing up to fifty pounds;
- near visual acuity to observe gauges, read measuring instruments and detect imperfections in finished products;
- colour vision to note subtle differences in shades or tones of coatings;

- capacity to work while exposed to heat, humidity, odours, dusts and noise resulting from processing operations;
- adaptability to working conditions in which there are a variety of physical hazards, such as exposure to burns, fumes and moving mechanical parts.

Additionally, for Cluster A:

- spatial perception to set up, observe and adjust the operation of equipment;
- finger dexterity to grasp and manipulate small objects rapidly and accurately;
- the occupation 8143-110 JEWELLERY COVERER requires higher levels of eye-hand co-ordination and finger dexterity to handle precious metals.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to eleven years of general education;

- six months to two years of related experience and on-the-job training, depending on the complexity of the occupation.

B

- eight to ten years of general education;
- one to six months of related experience and on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to more skilled occupations within their own cluster. Those in Cluster B may, with some additional training, advance to occupations in A. Other possibilities for advancement may be to appropriate inspecting and testing occupations in Chapter 8146, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, METAL PROCESSING. Those with supervisory potential may advance to 8130-142 FOREMAN, PLATING, METAL SPRAYING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their respective cluster or, with limited additional training, to other appropriate metal processing occupations in Minor Group 813/814, METAL PROCESSING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to metal plating, spraying and related processes and equipment;
- dealing with things and objects.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments**A**

- the evaluation of information against measurable or verifiable criteria, for example, measuring thickness of plating deposits;
- the precise attainment of set limits, tolerances or standards.

B

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

In addition, persons seeking entry to occupations 8143-142 ELECTROLESS PLATER, 8143-150 GALVANIZER, HOT DIP, and 8143-158 WIRE-COATING TENDER, METAL require a disposition for work involving the evaluation of information against measurable or verifiable criteria, for example, inspecting or measuring finished products to ensure they are coated according to specifications.

INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, METAL PROCESSING

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the processing of metals to make semi-finished or finished metal stock and metal products. Worker functions include: compiling data from specifications to determine appropriate inspection or test procedures and equipment; manipulating tools, measuring instruments and testing devices; working to precise tolerances when measuring and testing parts; comparing parts and materials to specified standards; and handling a variety of metal parts and materials such as ingots, rods, extrusions, wire, forgings and castings. Work activities include: measuring performance of metal-processing furnaces; collecting samples of molten metal from each furnace heat; testing products or samples to determine hardness, ductility, tensile strength and other physical characteristics; measuring dimensions of products using rule, micrometer, calipers and gauges; and examining products for defects.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8146-110	HEAT-TREATING INSPECTOR (metal fab., n.e.c.)	4	7	8146-134	WIRE INSPECTOR (wire prod.)	3	5
8146-118	TENSILE STRENGTH TESTER, METAL (iron & steel; non-ferrous metal)	4	6	8146-138	CASTING INSPECTOR (iron & steel; non-ferrous metal)	3	5
8146-122	COMBUSTION TESTER, FURNACE (iron & steel)	4	5	8146-142	HARDNESS TESTER, METAL (iron & steel; non-ferrous metal)	3	4
8146-126	METAL PROCESSING INSPECTOR (iron & steel; non-ferrous metal)	3	6	8146-146	METAL INSPECTOR (non-ferrous metal)	3	4
8146-130	SAND TESTER, FOUNDRY (iron & steel)	3	5	8146-150	TINPLATE INSPECTOR AND GRADER (iron & steel; non-ferrous metal)	3	4

B

		GED	SVP
8146-154	MOLTEN METAL SAMPLER (iron & steel; non-ferrous metal)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	<u>3</u>	4	<u>3</u>	3	<u>4</u>	4	3	5	4	L-M 47	I 3567	4-3	7-4	19	0Y	
		3	<u>4</u>	3		4	<u>3</u>	3	4		5					193	0Y2	
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4	L 47	I 3567	2	3	31	23	

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply inspecting, testing, grading or sampling procedures and techniques, and reasoning ability to make judgments regarding the quality of products and materials.
- form perception to detect defects in finished products;
- eye-hand co-ordination to operate testing machines and measuring instruments or devices;
- sufficient strength to perform light to medium work requiring the

lifting and handling of parts, materials and equipment weighing up to fifty pounds;

- near visual acuity to read indicator dials on testing machines and to use precision measuring instruments;
- capacity to work while exposed to any combination of heat, noise, dust and odours from nearby processing equipment;
- adaptability to working in conditions in which there are a variety of

physical hazards such as exposure to burns, moving mechanical parts and toxic fumes.

Additionally, for Cluster A:

- numerical ability to make calculations and take precision measurements.

Additionally, for Molten Metal Samplers:

- manual dexterity to collect samples from furnaces.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- nine to twelve years of general education;
- five months to four years of experience in related production work or

at a junior level of inspecting, testing, grading or sampling and on-the-job training, depending on the complexity of the occupation.

Molten Metal Samplers

- seven or eight years of general education;
- one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

8146-154 MOLTEN METAL SAMPLER is considered an entry occupation and advancement is normally to a higher skilled occupation in Cluster A. Experienced workers in Cluster A may, with additional training, advance to more skilled occupations within the cluster. Some may advance to the technician level of testing, such as 2117-264 LABORATORY PHYSICAL SCIENCE TECHNICIAN, provided they acquire the necessary qualifications. Those with supervisory potential may advance to 8130-118 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, METAL PROCESSING. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in Cluster A may transfer to other occupations requiring similar skills within the cluster or, with limited additional training, to appropriate occupations in other chapters, such as 8316-114 INSPECTOR, MACHINE SHOP; and 8336-114 INSPECTOR, METAL FABRICATING. Molten Metal Samplers may possibly transfer to other sampling occupations where the skill level is similar, such as 8116-116 MINERAL SAMPLER; 8176-158 SAMPLEMAN; and 8176-162 SAMPLER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

For occupations in Cluster A

Interests

- dealing with things and objects;
- activities which are basically non-social in nature, carried on in relation to metal processing and quality-control techniques.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example, measuring dimensions of finished products using micrometers, gauges and other instruments;
- the precise attainment of set limits, tolerances or standards.

For Molten Metal Samplers

Interests

- routine, concrete and organized work;
- dealing with things such as molten metal samples.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, METAL PROCESSING

WORK PERFORMED

This chapter includes occupations concerned with labouring or elemental work in the processing of metal to make semi-finished or finished metal stock and products. Worker functions include: feeding or offbearing equipment such as conveyors, crushers, blending machines or furnaces; handling, moving or carrying scrap metal, additives for alloying, moulding sand, refractory clays and other materials used in processing metal. Work activities include: pushing hand trucks and wheelbarrows; weighing out specified amounts of materials; dumping materials into hoppers of machines; preparing sand cores used in casting metal; skimming dross from furnaces; breaking up slag using sledge hammers; and cleaning castings, work areas and equipment.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8148-110	LABOURER, ALL-ROUND (non-ferrous metal)	2	2	8148-130	CASTING-HOUSE LABOURER (non-ferrous metal)	1	2
8148-114	LABOURER, STEEL PRODUCTION (iron & steel)	2	2	8148-134	FOUNDRY LABOURER, CORE ROOM (iron & steel)	1	2
8148-118	FOUNDRY WORKER (iron & steel; non-ferrous metal)	2	2	8148-138	FURNACE TAPPER LABOURER (non-ferrous metal)	1	2
8148-122	BILLET PUSHER (iron & steel)	1	2	8148-140	INDUSTRIAL-FURNACE CLEANER (iron & steel; non-ferrous metal)	1	2
8148-124	CASTING-MACHINE-OPERATOR HELPER (electric. equip.)	1	2	8148-142	PRODUCTION HELPER (wire prod.)	1	2
8148-126	POWDERED-METAL MIXER (iron & steel; non-ferrous metal)	1	2	8148-146	CHARGER HELPER (iron & steel)	1	1
				8148-150	PIG-MACHINE-OPERATOR HELPER (iron & steel)	1	1

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	M-H 347	I 3567	2-1	2-1	13	23
			4													

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple work instructions, with few concrete variables from standardized situations;
- form perception, for some occupations, to detect cracks, dents, scratches and other defects in products;
- eye-hand co-ordination and manual dexterity to use shovels, brooms, bars and tools, and to move materials, clean products and feed equipment;
- eye-hand-foot co-ordination to move materials by fork-lift-truck, hand truck or wheelbarrow;

- sufficient strength to perform medium to heavy work, requiring the lifting of products weighing up to one hundred pounds, the shovelling or dumping of materials, or the breaking-up of slag;
- ability to stoop, kneel or crouch in order to shovel spillage, clean equipment, to pick up items from floor level or break up slag;
- capacity to work while exposed to any combination of unpleasant conditions resulting from metal processing operations such as, heat, noise, fumes, odours, dusts and dirt;
- adaptability to working in conditions in which there are a variety of hazards such as moving machinery parts, burns, crushed fingers or toes when handling heavy objects, and possible physical strains.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specific educational requirements;

- on-the-job training, ranging from a short demonstration up to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs, and advancement is normally to higher skilled occupations for workers who demonstrate ability, interest and initiative.

Transfer

Transfer possibilities for workers in this chapter may be to occupations in labouring and elemental work found in other chapters, for example, Chapter 8118, OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, MINERAL ORE TREATING.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects, such as materials, tools and equipment;
- routine, concrete and organized work usually associated with labouring or elemental work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instructions, allowing little or no room for independent action or judgment in working out job problems.

GROUP 8149

METAL PROCESSING AND RELATED OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with a variety of activities in the processing of metals, such as operating and tending reheating and converting furnaces to produce purified metal or metal powders; operating and tending machines that draw, shape and emboss precious and base metals for jewellery products, and machines that cover wire and braid, strip and wind wire; tending equipment to salvage metal; and weighing and mixing various scrap metal for furnace charges.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS															
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C					
<i>Converting and Re-Heating Furnace Occupations</i>																	
8149-110	STEEL-DEGASSER OPERATOR (iron & steel)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	H 247	I 3567 4	7	91	0Y1
8149-114	STOVEMAN (iron & steel)	3	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 4	B 3567 3	5	91	0Y
8149-118	DEPILER TENDER (iron & steel; non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 4	I 3567 3	4	91	2Y
8131-174T	PRECIOUS METAL MELTER (non-ferrous metal)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	4	L 47	I 367 2	3	931	2Y
8149-122	LEAD ATOMIZER (non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 47	I 37 2	3	391	23Y
8149-126	SCRAP-METAL PROCESSOR (non-ferrous metal)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	4	4	VH 347	I 56 2	3	31	23Y
8149-130	ZINC-DUST MAKER (non-ferrous metal)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	M 4	I 56 2	2	391	23
<i>Wire Winding and Wire Convering Occupations</i>																	
8149-150	JEWELLERY-WIRE FINISHER (jewellery & precious metal prod.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 56 3	5	91	0Y
8149-154	ASBESTOS-WIRE FINISHER (wire prod.)	3	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	4	5	M 4	I 7 3	4	91	0Y
8149-158	WIRE-SAMPLE FORMER (wire prod.)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M 47	I 35 3	4	91	20Y
8149-162	ARMOURING-MACHINE TENDER (wire prod.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 47	I 5 3	3	91	20Y
8149-166	BRAIDER TENDER (wire prod.)	4	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I 5 3	3	913	2Y
8149-170	STRIPPING-MACHINE TENDER (wire prod.)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>4</u>	5	4	M 47	I 2 3	3	391	23Y
8149-174	WIRE-PAIRING-MACHINE TENDER (wire prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 4	I 6 2	3	319	23Y
8149-178	REEL WRAPPER (wire prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 4	I 2 2	2	319	23Y
8149-182	WIRE SPOOLER (wire prod.)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	M 4	I 5 2	2	319	23
<i>Metal and Oil Salvaging Occupations</i>																	
8149-202	DRIER TENDER (non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 457	I 5 2	3	319	23Y
8149-206	ELECTROSTATIC-SEPARATOR TENDER (iron & steel)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 4	I 7 2	3	319	23Y
8149-210	SCRAP-MACHINE TENDER (iron & steel; non-ferrous metal)	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	4	H 4	I 57 2	3	319	23Y
8149-214	POWDERED-METAL SALVAGE MAN (iron & steel; non-ferrous metal)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	4	M 47	I 5 2	2	319	23
8149-218	SCRAP MAN (iron & steel; non-ferrous metal)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	4	H 3467	I 56 2	2	319	23
<i>Other Metal Processing Occupations</i>																	
8149-238	UTILITY OPERATOR (non-ferrous metal)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	4	H 4567	I 3567 4	6	91	Y01

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8149-242	DENTAL-AMALGAM PROCESSOR (non-ferrous metal)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 3	3	6	91	0Y
8149-246	STRETCHER-LEVELLER OPERATOR (non-ferrous metal)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 4567	I 57	3	4	91	0Y
8149-250	PELLET SEGREGATOR (explosives)	3	4	3	4	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 7	3	4	91	0Y
8149-254	CARBIDE-TOOL-TIP MAKER (mach., weld. & forg.)	3	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>4</u>	5	5	M 47	I 356	3	4	91	0Y
8149-258	DIAMOND-POWDER BLENDER (metal fab., n.e.c.)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	5	5	M 47	I 57	2	4	913	2Y
8149-262	MATRIX FINISHER (metal stamp., press. & coat)	4	4	4	4	<u>4</u>	5	<u>3</u>	4	<u>4</u>	5	5	L 47	I 57	2	3	391	23Y
8149-266	STRETCHER-LEVELLER HELPER (non-ferrous metal)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 467	I 57	2	3	391	23
8149-270	METAL-FOIL SEPARATOR (non-ferrous metal)	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>4</u>	4	5	M 34	I	2	3	391	23
8149-274	METAL-TUBE MARKER (iron & steel; non-ferrous metal)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	4	M 47	I	2	3	319	23
8149-278	BUNDLING-MACHINE TENDER (mach., weld. & forg.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	4	5	M 4	I 5	2	2	319	23
8149-282	EXTRUDED-METAL COILER (non-ferrous metal)	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 4	I 35	2	2	319	2Y
8149-286	METAL IMPREGNATOR (iron & steel; non-ferrous metal)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	M 4	I 5	2	2	319	23Y
8149-290	POWDER-LUBRICATOR FINISHER (iron & steel; non-ferrous metal)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 4	I	2	2	319	23Y
8149-294	BOTTOM MAKER (iron & steel)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	VH 34	I 356	2	2	31	23
8149-298	COIL BANDER (iron & steel; non-ferrous metal)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I 56	2	2	31	23

FURNACEMEN AND KILNMEN: CLAY, GLASS AND STONE

WORK PERFORMED

This chapter includes occupations concerned with processing clay, glass, stone, abrasives, asbestos and related non-metallic minerals, through the application of heat, to make products such as porcelain and pottery ware, glass, brick and tiles. Worker functions include: operating, tending or feeding ware into equipment such as furnaces, kilns, ovens and curing chambers; compiling information regarding production requirements; and manipulating fuel valves, switches, draughts, and controls to prepare and position ware for processing. Work activities include: loading or directing the loading of materials, greenware or other items into kilns, furnaces or autoclaves; lighting gas or oil jets to fire kilns; adjusting controls to start, stop and regulate operation of equipment; unloading processed products; and examining them for defects.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8151-110	PERIODIC-KILN OPERATOR (cement, stone & clay; non-metal. min. prod., n.e.c.)	3	7	8151-198	ROTARY-KILN OPERATOR (cement, stone & clay)	3	5
8151-114	TUNNEL-KILN OPERATOR (cement, stone & clay; non-metal min. prod., n.e.c.)	3	7	8151-202	ABRASIVES-FURNACE PREPARER (non-metal. min. prod., n.e.c.)	3	5
8151-150	GLASS-FURNACE OPERATOR (glass)	3	6	8151-206	ASBESTOS BOARD CURER (asbestos & min. wool; cement, stone & clay)	3	5
8151-190	CUPOLA OPERATOR (asbestos & min. wool)	3	6	8151-210	ASBESTOS-CEMENT-PIPE CURER (asbestos & min. wool; cement, stone & clay)	3	5
8151-194	ASBESTOS-CEMENT-PRODUCT-AUTOCLAVE OPERATOR (asbestos & min. wool; cement, stone & clay)	3	6	8151-154	WINDSHIELD-AUTOCLAVE OPERATOR (glass)	3	4
				8151-156	ENAMELLING-FURNACE OPERATOR (metal stamp., press. & coat.)	3	4

B

		GED	SVP			GED	SVP
8151-116	HYDROGEN-FURNACE TENDER (electronic equip.)	3	4	8151-130	KILN SETTER (cement, stone & clay; non-metal. min. prod., n.e.c.)	2	2
8151-158	LEHR TENDER (glass)	3	3	8151-162	LENS HARDENER (scient. & ind. equip., n.e.c.)	2	2
8151-214	ASBESTOS-CEMENT-PRODUCTS-DRIER TENDER (asbestos & min. wool; cement, stone & clay)	2	3	8151-166	OVEN TENDER, FIBREGLASS (syn. fibres)	2	2
8151-118	DRYING-MACHINE TENDER (cement, stone & clay)	2	2	8151-218	RETORT TENDER (cement, stone & clay)	2	2
8151-122	PERIODIC-KILN-OPERATOR HELPER (cement, stone & clay; non-metal. min. prod., n.e.c.)	2	2	8151-222	CUPOLA CHARGER (asbestos & min. wool)	2	2
8151-126	SAGGER PACKER (cement, stone & clay; non-metal. min. prod., n.e.c.)	2	2	8151-226	ASBESTOS-CEMENT-PIPE-CURER HELPER (asbestos & min. wool; cement, stone & clay)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u> 4	3 4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>4</u>	5	4 <u>3</u>	L-M 4567 L-M 47	I 3567	3	7-4	91	0Y
B	4	4	4 5	4	4	4 5	<u>3</u> <u>4</u>	4	<u>3</u> <u>4</u>	5 4	5	L-H 234	I 356	3-2	4-2	319	23Y

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply instructions relating to the operation of equipment such as furnaces, kilns and autoclaves, and ability to judge the quality of processed products;
- eye-hand co-ordination and manual dexterity to adjust equipment controls and turn valves while monitoring gauges and recorders, and to handle parts and materials;
- capacity to work in conditions of extreme heat, noise, vibration, dusts, fumes and odours caused by processing equipment;
- adaptability to working in conditions where there are a variety of hazards, such as exposure to extreme heat, moving machinery, and broken glass.

Additionally, for Cluster A:

- spatial perception to observe the operation of equipment and direct the arrangement and size of kiln loads, and to carry out furnace and kiln repairs;
- form perception to detect cracks, warping and other defects in finished products, and to detect deterioration of furnace or kiln linings;

- colour discrimination for occupations involved in estimating temperature or progress of operations, and detecting product discolouration;
- sufficient strength to perform light to medium work, requiring the lifting of products and materials weighing up to fifty pounds;
- near visual acuity to observe equipment gauges and to examine finished products for defects.

Additionally, for Cluster B:

- sufficient strength to perform light to heavy work, requiring the lifting of products and materials weighing up to one hundred pounds, and the pushing or pulling of hand trucks or kiln cars;
- agility to climb stairs and ladders, and balance on catwalks in order to load and unload products to and from kilns, and to observe furnace or kiln operations;
- ability to stoop, kneel or crouch when performing such activities as loading products into kilns, sealing up kiln doors with bricks and mortar, lighting gas or oil jets to fire kilns, unsealing kiln doors and removing products.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;

- four months to four years of related experience and on-the-job training, depending on the complexity of the occupation.

B

- seven to ten years of general education;
- one to six months of related experience and on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

For most occupations in Cluster B, advancement is normally to occupations in Cluster A. Experienced workers in Cluster A may advance to more highly skilled occupations within the cluster. Those with supervisory potential may advance to 8150-114 FOREMAN, CLAY, GLASS AND STONE FURNACEMEN AND KILNMEN. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in both clusters may transfer to other occupations requiring similar skills within their respective clusters. Transfer may also be to other appropriate occupations in Minor Group 815, CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS; and Chapters 8115, MELTING AND ROASTING OCCUPATIONS, MINERAL ORES; and 8131, METAL SMELTING, CONVERTING AND REFINING FURNACEMEN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry into occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to clay, glass and stone processing equipment;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

B

Interests

- routine, concrete and organized work;
- dealing with things and objects;
- non-social work, carried on in relation to clay, glass and stone processing equipment.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

SEPARATING, CRUSHING, GRINDING AND MIXING OCCUPATIONS: CLAY, GLASS AND STONE

WORK PERFORMED

This chapter includes occupations concerned with separating, sizing or grading clay, glass, stone, abrasives, asbestos or related non-metallic minerals by centrifuging, screening and agitating; crushing materials into smaller particles; and grinding and mixing materials to produce a blended mass. Worker functions include: operating or tending equipment such as crushers, hammer mills and mixing machines; manipulating hand tools and regulating devices when adjusting machines; compiling information for work orders or batches from formulas and specifications; computing amounts of materials to be used; and comparing finished products to specified standards. Work activities include: weighing materials according to specifications; dumping, pouring, pumping or shovelling materials into tanks or machines; breaking up large pieces of material using bars and sledge hammers; and moving machine controls to start, stop and regulate flow of materials.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8153-150	ASBESTOS-PIPE-INSULATION MIXER (cement stone & clay)	3	6	8153-162	GLASS MIXER (glass)	3	5
8153-154	SLURRY-EQUIPMENT OPERATOR (cement, stone & clay)	3	6	8153-110	EMERY-GRADING OPERATOR (non-metal. min. prod., n.e.c.)	3	3
8153-158	BULK-PLANT TENDER (cement, stone & clay)	3	5	8153-174	DIAMOND-POWDER MIXER (non-metal. min. prod., n.e.c.)	2	4

B

		GED	SVP			GED	SVP
8153-166	MILL TENDER (cement, stone & clay)	3	4	8153-122	HAMMER-MILL TENDER (asbestos & min. wool; cement, stone & clay)	2	2
8153-170	CEMENT MILLER (cement, stone & clay)	3	4	8153-126	SCRUBBER TENDER (cement, stone & clay)	2	2
8153-178	ABRASIVE MIXER (non-metal min. prod., n.e.c.)	2	3	8153-130	RECLAIMER, ABRASIVES (non-metal. min. prod., n.e.c.)	2	2
8153-182	MIXING-MACHINE TENDER, PLASTERBOARD (cement, stone & clay)	2	3	8153-190	DRY-PRODUCTS MIXER (cement stone & clay)	2	2
8153-186	REFRACTORY-MORTAR MIXER (cement, stone & clay)	2	3	8153-194	GLAZE MAKER (cement, stone & clay)	2	2
8153-114	CRUSHER TENDER (cement, stone & clay)	2	2	8153-198	LIME SLAKER (cement, stone & clay)	2	2
8153-118	CULLET-CRUSHER TENDER (glass)	2	2	8153-202	MIXER (cement, stone & clay)	2	2
				8153-206	MIXER AND EXTRUDER, MODELLING CLAY (cement, stone & clay)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	4	3	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	4	4	L-H 47	I 57	3-2	6-3	91	0Y	
			4		<u>4</u>		<u>3</u>			5	5							
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-H 47	I-B 57	3-2	4-2	913	Y23	
			5			5	<u>3</u>		<u>4</u>	4			I 57					

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply instructions pertaining to clay, glass, stone or related mineral separating, crushing, grinding or mixing operations;
- form perception to detect blockages on conveyors, to ensure even flow of materials, or to examine size of crushed or milled materials;
- eye-hand co-ordination and manual dexterity to regulate processing operations and flow of materials, by adjusting controls and turning

- valves while monitoring gauges and meters, and to use hand tools and handle materials;
- sufficient strength to perform light to heavy work requiring the lifting of tools and bags of materials, the shovelling of emery, gravel or clay, or the breaking up of materials using sledge hammers;
- visual acuity, both near and far, to observe gauges, meters and charts, to read weigh scales, and to observe processing operations from a distance;
- adaptability to working while exposed to noise, vibrations, dusts, fumes and odours resulting from processing operations.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

- A
- eight to ten years of general education;
- B
- three months to two years related experience and on-the-job training, depending on the complexity of the occupation.
 - seven to ten years of general education;
 - one to six months of related experience and on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to other occupations within their cluster, or from Cluster B to A. Those with supervisory potential may advance to 8150-122 FOREMAN, CLAY, GLASS AND STONE SEPARATING, CRUSHING, GRINDING AND MIXING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Experienced workers in this chapter may transfer to appropriate occupations, requiring similar skills, within the chapter. With limited additional training, transfer may also be to some occupations in Chapters 8111, CRUSHING AND GRINDING OCCUPATIONS, MINERAL ORES; 8113, MIXING, SEPARATING, FILTERING AND RELATED OCCUPATIONS, MINERAL ORES; 8161, MIXING AND BLENDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS; and 8171, CRUSHING AND GRINDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to separating, crushing, grinding and mixing processes and machines;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example, performing titration tests;
- the precise attainment of set limits, tolerances or standards.

B**Interests**

- non-social work, carried on in relation to separating, crushing, grinding and mixing processes and machines;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences such as weighing and dumping materials;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

FORMING OCCUPATIONS, CLAY

WORK PERFORMED

This chapter includes occupations concerned with moulding, casting and extruding clay into products such as bricks, tiles, pottery and porcelain ware, by hand or by machine. Worker functions include: setting up, operating, and controlling machines that extrude, press or shape clay products; working precisely when handcrafting pottery; manipulating hand tools, gauges and measuring devices; computing machine set-up requirements from product specifications; and comparing finished products for conformance to specifications. Work activities include: installing and adjusting dies, cores, rings and other parts in machines; mixing materials according to formulas; loading materials into machines; moving controls to start, stop and regulate operation of machines; forming handcrafted pottery; trimming and smoothing unfired pottery and attaching handles; and loading products on conveyors or kiln cars preparatory to firing, glazing or drying.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

**8155-110 BRICK-MACHINE-SET-UP
OPERATOR**
(cement, stone & clay)

4 7

B

GED SVP

8155-114 POTTER (cement, stone & clay)

3 7

C

GED SVP

8155-118 DRY-PRESS OPERATOR
(cement, stone & clay)

8155-122 JIGGERMAN (cement, stone & clay)

**8155-126 BRICK-AND-TILE-MAKING-
MACHINE OPERATOR**
(cement, stone & clay)

3 6

3 6

3 6

GED SVP

8155-130 HOT-PRESS OPERATOR
(cement, stone & clay)

3 5

8155-138 RAM-PRESS OPERATOR
(cement, stone & clay)

3 4

D

GED SVP

8155-134 INSULATOR BUILDER
(cement, stone & clay)

**8155-142 CLAY-STRUCTURE MOULDER
AND INSTALLER**
(cement, stone & clay)

8155-144 STOPPER MAKER
(cement, stone & clay)

8155-146 HAND MOULDER
(asbestos & min. wool; cement, stone & clay;
non-metal. min. prod., n.e.c.)

8155-150 HAND PRESSER
(cement, stone & clay)

8155-154 SAGGER MOULDER
(cement, stone & clay)

3 5

3 4

2 4

2 3

2 3

2 3

GED SVP

8155-158 ARTISTIC-OBJECTS CASTER
(cement, stone & clay)

2 3

8155-162 GREENWARE FINISHER
(cement, stone & clay)

2 3

8155-166 JUNCTION MAKER
(asbestos & min. wool; cement, stone & clay)

2 3

8155-170 MOULD FILLER
(cement, stone & clay)

2 3

**8155-174 POTTERY-AND-PORCELAIN-WARE
CASTER** (cement, stone & clay)

2 3

8155-178 SLIP SEALER (cement, stone & clay)

2 2

8155-182 FLOWERPOT PRESSMAN
(cement, stone & clay)

2 2

8155-186 JIGGERMAN HELPER
(cement, stone & clay)

2 2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 4567	I 35	4	7	91	0Y1
B	<u>3</u>	4	4	<u>2</u>	<u>2</u>	5	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	4	M 47	I	3	7	9081	9X0
C	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M-H 4567	I 57	3	6-4	91	0Y
				<u>4</u>	<u>4</u>		<u>4</u>	4									
D	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L-M 34	I 57	3-2	5-2	139	20Y
			5			4			<u>4</u>	4						13	2Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

Brick-Machine-Set-Up Operators

- learning ability to understand the operation of brick-making machines, and to acquire and apply the techniques of machine set up and operation;
- spatial perception to set-up, operate and repair machinery and to monitor functioning of equipment;
- form perception to examine bricks for conformance to specifications and to use calipers to confirm dimensions of articles;
- eye-hand-finger co-ordination, finger and manual dexterity, and the capacity to extend the hands and arms in order to reach for and handle machine parts, controls, hand tools and measuring instruments;
- sufficient strength to perform medium work, requiring frequent standing and walking, and the handling of parts weighing up to twenty pounds;
- ability to give and receive verbal instructions or information;
- near visual acuity to set up machines and to read measuring instruments;
- capacity to work while exposed to extreme heat and noise from nearby kilns.

Potters

- learning ability to acquire and apply the techniques involved in molding clay to form handcrafted pottery;
- spatial perception to conceive style and shape of pottery and to form clay accordingly;
- form perception to insure that pottery produced is without flaws;
- eye-hand-finger and eye-hand-foot co-ordination, finger dexterity

and manual dexterity to mould pottery while simultaneously pumping treadle to turn potter's wheel;

- capacity to extend the hands and arms in order to reach for and handle work aids, and to feel firmness of clay while moulding;
- sufficient strength to perform medium work requiring the handling of clay.
- near visual acuity and depth perception to observe slope and form of object being moulded.

C and D

- learning ability to understand clay forming operations and apply the techniques involved;
- spatial perception to operate and repair clay forming equipment and to visualize finished products from specifications;
- form perception to detect deviations from standards in materials or products;
- eye-hand-finger co-ordination, finger and manual dexterity to perform such activities as hand moulding pottery, manipulating work aids, and skilfully using measuring instruments and hand tools;
- capacity to extend the hands and arms to reach for and handle machine controls, materials and equipment;
- sufficient strength to perform light to heavy work, depending on the occupation involved, requiring the lifting of machinery parts and clay products, and pushing handtrucks;
- ability to stoop and kneel as required, to handle parts or products at floor level;
- ability to give and receive verbal instructions or information;
- near visual acuity and depth perception in some occupations to read measuring instruments and to examine products for defects;
- adaptability to working in the presence of noise, dirt, dusts, fumes and odours resulting from processing or forming operations.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- eleven to twelve years of general education;
- two or more years of on-the-job training.

B

- nine to ten years of general education;

- two to four years of on-the-job training.

C

- eight to ten years of general education;
- three months to two years of on-the-job training.

D

- seven to nine years of general education;
- one to nine months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Experienced Brick-Machine-Set-Up Operators with supervisory potential may advance to 8150-110 FOREMAN, CLAY, GLASS AND STONE FORMING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

B

Experienced Potters with artistic ability may increase their earnings through improving the quality, design and originality of their products, or may become self-employed.

C and D

Workers in these clusters may advance to other occupations requiring similar skills within their respective cluster, or to appropriate occupations in Chapter 8156, INSPECTING, TESTING AND GRADING OCCUPATIONS: CLAY, GLASS AND STONE PROCESSING AND FORMING. Experienced workers with supervisory ability and potential may advance to 8150-110 FOREMAN, CLAY, GLASS AND STONE FORMING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

A

Transfer for Brick-Machine-Set-Up Operators is limited, but may be to occupations in Cluster C.

B

Because of intensive specialization, transfer for Potters is limited, but may be to 8155-122 JIGGERMAN. Those with artistic ability and training may consider transfer to clay sculpturing occupations, such as 3311-114 SCULPTOR.

C and D

Transfer for workers in these clusters is normally to other occupations within their own individual cluster.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to brick-making machines and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria for example, verifying dimensions of formed bricks using calipers;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B

Interests

- non-social work, carried on in relation to handcrafted pottery techniques;
- activities leading to satisfaction from tangible results;
- abstract and creative work;
- dealing with things and objects.

Temperaments

- the evaluation of information against sensory or judgmental criteria;
- the interpretation of feelings, ideas or facts in terms of personal viewpoint;
- the evaluation of information against measurable or verifiable criteria.

C

Interests

- non-social work, carried on in relation to clay-forming machines and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example, measuring formed products for conformance to specifications;
- the precise attainment of set limits, tolerances or standards.

D**Interests**

- dealing with things and objects;
- routine, concrete and organized work;
- non-social work, carried on in relation to clay-forming machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

FORMING OCCUPATIONS, GLASS

WORK PERFORMED

This chapter includes occupations concerned with blowing, moulding and drawing molten glass or glass tubing into products such as artistic objects, scientific glass apparatus, standard shaped glassware, television picture tubes, flat glass and fibreglass filaments. Worker functions include: synthesizing and interpreting ideas to conceive shapes of artistic objects; analyzing and compiling information to develop scientific apparatus; working to close tolerances to shape, bend or join glass tubing, rods and parts; manipulating glass blowpipe, torches and artisan's hand tools; setting up, operating or tending glass-forming or glass-drawing machines; comparing finished products to specifications; and handling glassware and materials. Work activities include: dipping blowpipe head into furnace to obtain gob of molten glass; shaping gob into semi-finished or final artistic form, or standard shaped glassware; heating and shaping glass using glass-blowing lathe and hand tools; installing and adjusting moulds, flow valves, plungers and other parts in glass-forming or drawing machines; starting, stopping and regulating machines that form or draw glass containers, flat glass, filaments or stands of fibreglass and other products from molten glass; and weighing, measuring and examining finished glassware.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8155-210	MASTER-GLASS BLOWER (glass)	5	8	8155-218	UNDERMASTER GLASS BLOWER (glass)	4	8
8155-212	SCIENTIFIC-GLASS-APPARATUS BLOWER (glass; scient. & ind. equip., n.e.c.)	4	8				

B

		GED	SVP			GED	SVP
8155-214	GLASS-FORMING-MACHINE SET-UP MAN (glass)	4	8	8155-238	GLASS-FORMING-MACHINE OPERATOR (glass)	3	6
8155-222	SPIN-MOULD-MACHINE SET-UP OPERATOR (glass)	4	7	8155-250	GLASS-DRAWING-MACHINE OPERATOR (glass)	3	5
				8155-254	YARDAGE CONTROLMAN (syn. fibres)	3	5

C

		GED	SVP			GED	SVP
8155-226	GLASS-BLOWING-LATHE OPERATOR (glass; scient. & ind. equip., n.e.c.)	3	8	8155-242	NEON-SIGN BENDER-PUMPMAN (misc. prod. fab., n.e.c.)	3	6
8155-230	GLASS BLOWER (glass)	3	7	8155-246	GLASS-FORMING-MACHINE UPKEEP MAN (glass)	3	6
8155-234	GLASS-NOVELTY MAKER (glass)	3	7	8155-258	GATHERER (glass)	2	4

D

		GED	SVP			GED	SVP
8155-262	FIBREGLASS-MACHINE TENDER (syn. fibres)	2	3	8155-266	GLASS-FORMING-MACHINE-OPERATOR HELPER (glass)	2	2
				8155-270	HOT-GLASS WORKER (glass)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u> <u>3</u>	3	4	<u>2</u> <u>3</u>	<u>2</u>	5	<u>3</u> 4	<u>3</u>	<u>3</u>	5	<u>3</u>	L 4567	I 367	5-4	8	081	9XY01 9Y01
B	<u>3</u>	4 3	4 3	<u>3</u> 4	<u>3</u>	4	<u>3</u> 4	<u>3</u> 4	<u>3</u> 4	5	5 4	L 34567	I 356	4-3	8-5	91	0Y
C	<u>3</u>	4	4	<u>3</u> 4	<u>3</u>	4	<u>3</u>	<u>3</u> 4	<u>3</u>	5	3 4 5	L 47	I 36	3-2	8-4	091	Y90
D	4	4 5	4	<u>4</u>	4	5	<u>4</u> <u>3</u>	4	<u>4</u> <u>3</u>	5	5	L 347	I 356	2	3-2	913	2Y

APTITUDES AND CAPACITIES

Workers in these cluster require:

A

- learning ability to understand and acquire the knowledge and techniques associated with glass-blowing, and ability to judge quality and colour of finished glass objects;
- spatial perception to visualize the shape of finished objects from drawings or verbal instructions;
- form perception to observe characteristics of glass, for example to determine readiness of molten glass for use, and to confirm shapes of products meet requirements of sketches and drawings;
- eye-hand-finger co-ordination, finger and manual dexterity, and the capacity to extend the hands and arms in any direction, in order to reach for and handle blowpipe, punty and artisan's hand tools;
- colour discrimination to perceive differences from desired colour or shade of glass objects;
- near visual acuity to measure dimensions of finished objects using micrometers, calipers and rule;
- ability to give and receive verbal instructions or information;
- capacity to work while exposed to extreme heat, fumes and odours from molten glass and nearby furnaces;
- adaptability to working conditions where there are physical hazards such as exposure to burns and cuts.

B

- learning ability to understand glass-forming machine operations and to apply the techniques of setting up, operating and repairing this equipment;
- spatial perception to set up, operate and repair glass-forming or drawing machines, and to envisage the shape of resultant products from specifications;
- form perception to detect blisters, cracks and other defects in glassware;
- eye-hand-finger co-ordination, finger and manual dexterity, and the capacity to extend the hands and arms to operate machine controls, handle tools and use measuring instruments;
- ability to stoop, kneel or crouch, as required in order to set up and adjust machines;
- ability to give and receive verbal instructions or information;

- visual acuity, both near and far, to set up and observe functioning of machines;
- capacity to work while exposed to extreme heat, noise and odours resulting from glass-forming operations;
- adaptability to working where there are physical hazards such as exposure to moving mechanical parts, burns and cuts.

C

- learning ability to understand glass blowing and forming operations and to acquire and apply the techniques involved;
- spatial perception to shape glass or join glass tubing according to specifications;
- form perception to detect defects in glassware;
- eye-hand-finger co-ordination, finger and manual dexterity, and the capacity to extend the hands and arms to manipulate machine controls, blowpipes and tools;
- near visual acuity to shape objects to desired form and dimensions;
- colour vision to judge the colour of gas flames and glass objects;
- capacity to work in conditions of extreme heat and odours resulting from glass-forming operations;
- adaptability to conditions in which there are physical hazards such as exposure to burns and cuts.

D

- learning ability to understand and carry out detailed but uninvolved instructions for glass-forming operations;
- spatial perception for such activities as detecting machine malfunctions;
- eye-hand-finger co-ordination, manual dexterity, and the capacity to extend the hands and arms to operate machine controls, and handle products and tools;
- ability to stoop or crouch as required, to clean glass from work area, or to handle objects at or near floor level;
- visual acuity, both near and far, to observe machine for malfunctions and to blow molten glass on blowpipe;
- capacity to work in conditions of extreme heat, noise and odours resulting from forming operations;
- adaptability to working conditions where there are physical hazards such as exposure to moving mechanical parts, burns and cuts.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eleven to thirteen years of general education;
- an apprenticeship program, or on-the-job training for a period ranging from five to seven years.

B

- nine to twelve years of general education;
- on-the-job training and related experience varying from six months to five years depending on the complexity of the occupation.

CHAPTER 8155B

C

- eight to ten years of general education;
- related experience and on-the-job training varying from six months to six years depending on the complexity of the occupation.

D

- eight or nine years of general education;
- one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Some workers in this cluster may advance to more skilled occupations within the cluster, for example from 8155-218 UNDERMASTER GLASS BLOWER to 8155-210 MASTER-GLASS BLOWER. Those with supervisory ability may advance to 8150-110 FOREMAN, CLAY, GLASS AND STONE FORMING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

B

Some workers in this cluster may advance to more skilled occupations within the cluster, for example from 8155-238 GLASS-FORMING-MACHINE OPERATOR to 8155-214 GLASS-FORMING-MACHINE SET-UP MAN. Experienced workers who have supervisory ability may advance to 8150-110 FOREMAN, CLAY, GLASS AND STONE FORMING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

C

Some workers in this cluster may advance to more skilled occupations within the cluster, or in Clusters B and A, for example, from 8155-258 GATHERER to 8155-230 GLASS BLOWER; from 8155-246 GLASS-FORMING-MACHINE UPKEEP MAN to 8155-214 GLASS-FORMING-MACHINE SET-UP MAN; and from 8155-234 GLASS-NOVELTY MAKER to 8155-218 UNDERMASTER GLASS BLOWER. Experienced workers who have supervisory ability may advance to 8150-110 FOREMAN, CLAY, GLASS AND STONE FORMING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

D

These occupations are considered as entry jobs, and advancement is normally to more highly skilled occupations within this chapter for workers who demonstrate ability, interests and initiative.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their respective cluster. Transfer for experienced workers may also be to occupations in Chapter 8156, INSPECTING, TESTING AND GRADING OCCUPATIONS: CLAY, GLASS AND STONE PROCESSING AND FORMING.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- activities leading to satisfaction from tangible results such as finished artistic objects;
- abstract and creative work;
- dealing with things and objects.

Temperaments

- the evaluation of information against sensory or judgmental criteria;
- the interpretation of feelings or ideas in terms of personal viewpoint which is reflected in the finished art work or product;
- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, for example, measuring formed glass apparatus using micrometers, calipers and rule;
- a variety of duties often characterized by frequent change.

B**Interests**

- non-social activities, carried on in relation to glass-forming machines and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example, measuring formed glass containers for conformance to specifications;
- the precise attainment of set limits, tolerances or standards.

C**Interests**

- activities leading to satisfaction from tangible results;
- non-social activities, carried on in relation to glass-blowing techniques;
- dealing with things and objects.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against sensory or judgmental criteria;
- the evaluation of information against measurable or verifiable criteria.

D**Interests**

- non-social activities, carried on in relation to glass-forming machines and techniques;
- dealing with things and objects;
- routine, concrete and organized tasks.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

OTHER REQUIREMENTS

An artistic flair or background, or a knowledge of chemistry and physics would prove a definite asset to those workers involved in creative glass-blowing activities.

FORMING OCCUPATIONS, STONE

WORK PERFORMED

This chapter includes occupations concerned with forming mixtures of cementing material and mineral aggregate, abrasives, asbestos and related non-metallic minerals into products such as pipes, tiles, wallboard, blocks, panels and abrasive wheels, by hand or by machine. Worker functions include: setting up, operating or tending machines that form products by moulding, casting, extruding, pressing or rolling materials; working to close tolerances when regulating pressures, flow rates, slurry mixtures, or conveyor speeds of forming equipment; manipulating tools when installing and adjusting mandrels, rollers, cutters and other parts in machines; compiling information from work orders or blueprints; computing set-up requirements; and comparing finished products to specifications. Worker activities include: mixing materials according to formulas; loading materials into machines; moving controls to start, stop and regulate machines; bending and cutting green asbestos-cement pipe by hand, to form elbows of specified radii and lengths; and measuring, weighing and examining finished products.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP
8155-310	DIAMOND-ABRASIVE-WHEEL MAKER (non- metal. min. prod., n.e.c.)	4	7

B

		GED	SVP			GED	SVP
8155-314	ASBESTOS-CEMENT-PIPE- MACHINE SET-UP MAN (asbestos & min. wool; cement, stone & clay)	3	7	8155-318	ASBESTOSBOARD-MACHINERY SET-UP MAN (asbestos & min. wool; cement, stone & clay)	3	7

C

		GED	SVP			GED	SVP
8155-322	PLASTERBOARD-MACHINE OPERATOR (cement, stone & clay)	2	6	8155-358	CONCRETE, SPIN-CAST MAN (cement, stone & clay)	2	4
8155-326	ASBESTOS-CEMENT-PIPE SPIN FORMER (asbestos & min. wool; cement, stone & clay)	2	6	8155-362	CONCRETE-FITTINGS MAKER (cement, stone & clay)	2	4
8155-330	ASBESTOSBROAD-MACHINE OPERATOR (asbestos & min. wool; cement, stone & clay)	2	6	8155-366	CONCRETE-VAULT MAKER (cement, stone & clay)	2	4
8155-334	ASBESTOS-CEMENT-PIPE-SPIN- FORMER HELPER (asbestos & min. wool; cement, stone & clay)	2	5	8155-370	CYLINDER COATER (cement, stone & clay)	2	3
8155-338	PRECAST-CONCRETE MOULDER (cement, stone & clay)	2	5	8155-374	ASBESTOS-CEMENT-INSULATION MOULDER (asbestos & min. wool; cement, stone & clay)	2	3
8155-342	PULPSTONE BUILDER (non- metal. min. prod., n.e.c.)	2	5	8155-378	CONCRETE-HYDRAULIC-PRESS OPERATOR (cement, stone & clay)	2	3
8155-346	ABRASIVE-WHEEL MOULDER (non-metal. min. prod., n.e.c.)	2	4	8155-382	ASBESTOS-CEMENT-PIPE BENDER (asbestos & min. wool; cement, stone & clay)	2	3
8155-350	INSULATION-MAT-MACHINE OPERATOR (asbestos & min. wool)	2	4	8155-386	ASBESTOS-CEMENT-PIPE-CORE PULLER (asbestos & min. wool; cement, stone & clay)	2	3
8155-354	CORRUGATED-ASBESTOSBOARD FORMER (asbestos & min. wool; cement, stone & clay)	2	4				

8155-390	LAUNDRY-TUB MAKER	2	3
	(cement, stone & clay)		
8155-394	PRECAST-TERRAZZO MAKER	2	3
	(cement, stone & clay)		

8155-398	SCAGLIOLA CASTER	2	3
	(cement, stone & clay)		
8155-410	ASBESTOS-CEMENT-TILE MAKER	2	2
	(asbestos & min. wool; cement, stone & clay)		

D

		GED	SVP			GED	SVP
8155-402	BLOCK-MAKING-MACHINE	2	3	8155-414	CHALK-EXTRUDING-MACHINE	2	2
	TENDER (cement, stone & clay)				TENDER (misc. prod. fab., n.e.c.)		
8155-406	CONCRETE-PIPE-MACHINE	2	3	8155-418	CHALK MOULDER	2	2
	TENDER (cement, stone & clay)				(misc. prod. fab., n.e.c.)		
				8155-422	CYLINDER LINER	2	2
					(cement, stone & clay)		

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I	4	7	91	90Y	
B	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 4567	I 456	3	7	91	0Y4 0Y	
C	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L-H 347	I 456	2	6-2	913	2Y0 2Y	
D	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 4	I 5	2	3-2	931	2Y	
			5							4								

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability, for 8155-310 **DIAMOND-ABRASIVE-WHEEL MAKER** and workers in Cluster B, to understand forming machine functioning and to apply the techniques of machinery setup, operation and adjustment; and for workers in Clusters C and D, to understand and apply instructions pertaining to stone, abrasive, asbestos or related non-metallic mineral forming operations;
- spatial perception to visualize the size and shape of finished products from drawings and specifications, or to visualize the interrelationship of parts when setting up machines;
- form perception to detect broken edges, cracks, wrinkles and other defects in formed products;
- eye-hand-finger co-ordination, manual dexterity, and the capacity to

extend the hands and arms, to reach for and handle machine controls, hand tools, parts and materials;

- sufficient strength to perform light to heavy work, depending on the occupation involved, requiring the manipulation of tools, the lifting of moulds, parts and materials, the pushing of trucks, or the rolling of large cement pipes;
- capacity to work while exposed to conditions of wetness, noise and vibration resulting from forming operations;
- adaptability to working where there are physical hazards such as exposure to moving machinery parts, falls, and possible crushed fingers or toes when handling heavy objects.

Workers in A, B and C also require:

- finger dexterity to set dials of machine controls, and to use measuring instruments quickly and accurately.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten or eleven years of general education;
- up to four years of related experience and on-the-job training.

B

- nine or ten years of general education;
- up to four years of related experience and on-the-job training.

C

- eight to nine years of general education;
- one month to two years of related experience and on-the-job training.

D

- eight to nine years of general education;
- one to three months of related experience and on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and some additional training, workers in this chapter may advance to occupations requiring higher skills within their individual cluster and also to other clusters. Those with supervisory potential may advance to 8150-110 FOREMAN, CLAY, GLASS AND STONE FORMING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Generally, transfer may be to other occupations requiring similar skills within this chapter. Workers whose occupations concern the operation or setting up of machines may, with limited additional training, transfer to occupations with similar basic requirements in other chapters, for example, 8155-310 DIAMOND-ABRASIVE-WHEEL MAKER may transfer to 8315-122 MACHINE-TOOL OPERATOR, PRODUCTION, and some workers in Clusters B and C may transfer to 8235-122 FORMING-MACHINE OPERATOR, PARTICLE BOARD, or 8155-110 BRICK-MACHINE-SET-UP OPERATOR. Workers in Cluster C may transfer to appropriate occupations in Chapter 8155A, FORMING OCCUPATIONS, CLAY that require similar skills.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Clusters C and D:

- routine, concrete and organized work.

Temperaments

A

- the evaluation of information against sensory or judgmental criteria;
- the evaluation of information against measurable or verifiable criteria, for example, verifying dimensions of diamond-abrasive wheels using micrometer;
- the precise attainment of set limits, tolerances or standards.

B

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

D

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

INSPECTING, TESTING AND GRADING OCCUPATIONS: CLAY, GLASS AND STONE PROCESSING AND FORMING

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the processing and forming of clay, glass, stone, abrasives, asbestos and related non-metallic minerals. Worker functions include: compiling data from specifications to determine inspection or test procedures; comparing results of tests or examination with specified standards; operating testing equipment; and manipulating hand tools, measuring instruments and inspection devices to test or inspect products. Work activities include: weighing or measuring products for conformance to specifications; testing materials or products for such properties as tensile strength, hardness, bursting strength and dielectric strength; and examining finished articles for defects such as cracks, dents and colour variation.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8156-110	ABRASIVE-WHEEL TESTER (non-metal. min. prod., n.e.c.)	3	6	8156-138	LAMINATED-ASBESTOS-PRODUCTS INSPECTOR (asbestos & min. wool)	3	5
8156-114	PIPE TESTER (asbestos & min. wool; cement, stone & clay)	3	5	8156-142	GLASS-CONTAINERS TESTER (glass)	3	4
8156-118	BRICK-AND-TILE TESTER (cement, stone & clay)	3	5	8156-146	QUALITY-CONTROL INSPECTOR, GLASS (glass)	3	4
8156-120	CONCRETE-PRODUCTS TESTER (cement, stone & clay)	3	5	8156-150	ABRASIVE-SHEETS INSPECTOR (non-metal min. prod., n.e.c.)	2	3
8156-122	ASBESTOS-FIBRES TESTER (asbestos & min. wool)	3	5	8156-154	ASBESTOS-SHINGLE INSPECTOR (asbestos & min. wool)	2	3
8156-126	FIBREGLASS TESTER (syn. fibres)	3	5	8156-158	PLASTERBOARD INSPECTOR (cement, stone & clay)	2	3
8156-130	CONCRETE-PRODUCTS INSPECTOR (cement, stone & clay)	3	5	8156-162	INSULATOR TESTER (electric. equip.)	2	2
8156-134	POTTERY-AND-PORCELAIN-WARE INSPECTOR (cement, stone & clay)	3	5	8156-166	FIBREGLASS INSPECTOR (syn. fibres)	2	2
				8156-170	ABRASIVE-AND-CLAY-PRODUCTS GRADER (cement, stone & clay)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
3	4	4	4	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	5	4	L-M 47	I 57	3-2	6-2		91	Y02
4	3	3	3	<u>4</u>		<u>3</u>		<u>4</u>		5						913	
										<u>3</u>							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply inspecting, testing or grading procedures, and to make judgments regarding the quality of products or materials;
- form perception to examine products for defects or to observe variations in oscilloscope waveforms on sonic tester;
- clerical perception to correctly interpret work instructions or specification manuals, to prepare inspection and test data, and to maintain accurate and legible records;
- eye-hand co-ordination to use testing machines, equipment or measuring instruments;
- manual dexterity to handle products, machine controls or instruments;
- colour discrimination required for 8156-118 BRICK-AND-TILE

TESTER, 8156-134 POTTERY-AND-PORCELAIN-WARE INSPECTOR, 8156-138 LAMINATED-ASBESTOS-PRODUCTS INSPECTOR and 8156-170 ABRASIVE-AND-CLAY-PRODUCTS GRADER when comparing colour of glaze on pottery ware and when grading other products by colour;

- near visual acuity and depth perception to examine products for defects, and to read gauges, micrometers and other measuring instruments;
- sufficient strength to perform light to medium work, such as that of lifting products and equipment, pushing of hand trucks or rolling of large concrete pipe;
- capacity to work while exposed to noise, fumes, dusts or odours resulting from test or processing equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;

- previous experience in related production work or junior levels of inspecting and testing, and on-the-job training, varying from one month to two years, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers with supervisory potential may advance to appropriate occupations in Volume 1, Unit Group 8150, FOREMEN: CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within this chapter, or to appropriate inspecting, testing or grading occupations in Chapters 8116, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, ORE TREATING, and 8146, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, METAL PROCESSING.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- work that is basically non-social in nature and is carried on in relation to processes, machines and techniques;
- dealing with things and objects such as testing equipment, measuring instruments and various products.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- repetitive or short cycle operations carried out according to set procedures or sequences.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: CLAY, GLASS AND STONE PROCESSING AND FORMING

WORK PERFORMED

This chapter includes occupations concerned with labouring or elemental work in the preparation of clay, glass, stone, abrasives, asbestos and related non-metallic minerals for use in a semi-finished or finished state. Worker functions include: feeding equipment such as shearing machines, mixing machines and presses and offbearing products, and loading or unloading kilns and driers; and handling materials, handtrucks and tools to perform routine tasks. Work activities include: cleaning and finishing glassware, pottery or porcelain ware by hand; examining products for elementary defects; preparing kilns for re-use and building and pulling down kiln doors; heating glassware to remove defects; and cutting sheets of glass to specified lengths.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8158-110	ASBESTOSBOARD SHEARER (asbestos & min. wool)	1	2	8158-142	CYLINDER-FORM ASSEMBLER (cement, stone & clay)	1	2
8158-114	CLAY PRESSMAN (cement, stone & clay)	1	2	8158-146	GLASS-CUT-OFF MAN (glass)	1	2
8158-118	GLASSWARE FINISHER (glass)	1	2	8158-150	KILN-DOOR BUILDER (cement, stone & clay)	1	2
8158-122	MIXER HELPER (cement, stone & clay)	1	2	8158-154	KILN LABOURER (cement, stone & clay)	1	2
8158-126	ASBESTOS MOULDER (asbestos & min. wool)	1	2	8158-158	SPRUE BREAKER (glass)	1	2
8158-130	BALCONY MAN (glass)	1	2	8158-162	ASBESTOS-MOULD STRIPPER (asbestos & min. wool)	1	1
8158-134	BISQUE CLEANER (cement, stone & clay)	1	2	8158-166	ASBESTOS-SHINGLE FLOOR HAND (asbestos & min. wool)	1	1
8158-138	CONCRETE-BLOCK MAKER (cement, stone & clay)	1	2	8158-170	WARE CLEANER (cement, stone & clay)	1	1

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	5	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L-VH 4	I 357	1	2-1	31	23Y
	4	4						<u>4</u>	4							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple instructions;
- form perception to perform such activities as examining bisque ware and glass for defects, and removing defects using sandpaper or gas flame;

- eye-hand-finger co-ordination and manual dexterity to finish products and to feed machines, use hand tools, tongs, shovels and other devices;
- capacity to perform work that ranges from light to very heavy, requiring the handling of tools, and the lifting of products and materials, or the shovelling of cement, clay, sand or gravel;
- capacity to work while exposed to heat, noise, vibration, hot materials, fumes, dusts and odours resulting from processing operations.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specific educational requirements;

- on-the-job training, ranging from a short demonstration to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered as entry jobs, and advancement is normally to those more skilled occupations in Minor Group 815, CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS, for which limited additional training is sufficient.

Transfer

Workers in this chapter may transfer to other occupations in this chapter or to occupations in labouring and elemental work in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized tasks;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences, such as feeding materials into machines;
- performing tasks only under specific instruction, allowing little or no room for independent action or judgment in solving job problems;
- the precise attainment of set limits, tolerances, or standards, for example, cutting tiles or glass to specified lengths and finishing glass or bisque ware.

CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS, N.E.C.

This group includes occupations not elsewhere classified, concerned with processing, forming and finishing clay, glass, stone, abrasives, asbestos and related non-metallic minerals.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
8159-110	ABRASIVE-COATING-MACHINE OPERATOR (non-metal. min. prod., n.e.c.)	3	4	3	<u>3</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	5	5	M 4	I	3	5	91	Y0
8159-112	DECORATING-MACHINE TENDER (glass; plastic prod.)	4	4	4	<u>4</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	4	4	L 47	I 5	2	3	913	2Y
8159-114	PLASTERBOARD CUTTER (cement stone & clay)	4	4	4	4	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	5	5	L 4	I	2	3	913	2Y
8159-116	FETTLER (cement, stone & clay)	4	4	4	4	<u>4</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 4	I 7	2	2	319	23Y
8159-118	MAT PACKER (asbestos & min. wool)	4	4	5	4	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	5	5	M 4	I 57	2	2	319	23Y
8159-120	ASBESTOSBOARD SANDER (asbestos & min. wool)	4	4	4	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	<u>4</u>	5	M 4	I 57	2	2	319	23Y
8159-122	FIBREGLASS GRINDER (asbestos & min. wool)	4	4	4	4	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	4	5	M 4	I 57	2	2	319	23Y
8159-126	ASBESTOS-FIBRE PREPARER (asbestos & min. wool)	4	4	4	4	4	4	<u>4</u>	<u>4</u>	<u>3</u>	4	5	H 4	I 57	2	2	31	23Y
8159-130	PLASTERBOARD PAPER MAN (cement, stone & clay)	4	4	4	4	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	4	5	M 4	I 57	2	2	31	23Y
8159-134	CASTINGS FINISHER (cement, stone & clay)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 4	I	2	2	31	23Y
8159-138	PORCELAIN GLAZER (cement, stone & clay)	4	4	5	5	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 4	I	2	2	31	23Y

MIXING AND BLENDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

WORK PERFORMED

This chapter includes occupations concerned with mixing and blending chemicals and related materials to produce a single mass or compound, or to achieve quality, texture, colour or other characteristics. Worker functions include: operating or tending mixers or blenders that combine, mingle or fuse chemicals and related materials; manipulating measuring equipment or special testing devices used in the mixing of dyes, chemicals or paints; and comparing test results with specified standards to ensure quality of products. Work activities include: weighing or measuring ingredients; manually dumping or pouring ingredients into equipment; observing mixing and blending operations; turning valves or moving levers to regulate mixing and blending process; and recording production or test information.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8161-110	COLOURMAN (pulp & paper)	3	7	8161-150	KETTLE OPERATOR (chem., n.e.c.)	3	5
8161-112	BLENDER (petrol. & coal prod.)	3	7	8161-154	WHITE-LEAD MIXER (chem., n.e.c.)	3	5
8161-114	GREASE MAKER (petrol. & coal prod.)	3	7	8161-158	INK MATCHER (chem., n.e.c.)	3	5
8161-118	COLOUR MATCHER (chem., n.e.c.)	3	6	8161-162	MIXER OPERATOR (explosives)	3	4
8161-122	TINTER (paint & varn.)	3	6	8161-166	WET-EXPLOSIVE MIXER (explosives)	3	4
8161-126	SOAP MAKER (soap)	3	6	8161-170	CRUTCHER OPERATOR (soap)	3	4
8161-130	CATALYST OPERATOR, GASOLINE (chem., n.e.c.)	3	5	8161-174	ORTHOPHOSPHATE-WET-MIX OPERATOR (chem., n.e.c.)	3	4
8161-134	MAKE-UP MAN (chem., n.e.c.)	3	5	8161-178	SIZE MAN (chem., n.e.c.)	3	4
8161-136	ACID MAN, NITROCELLULOSE (explosives)	3	5	8161-182	WOOD-PULP CAUSTIC-LIQUOR MAKER (chem., n.e.c.)	3	4
8161-138	NITROGLYCERINE-NITRATOR OPERATOR (explosives)	3	5	8161-186	DYE MIXER (chem., n.e.c.)	3	4
8161-142	TANNING-SOLUTION MAN (leather tan. & fur dress.)	3	5	8161-190	DRY-EXPLOSIVE MIXER (explosives)	2	4
8161-146	BANBURY-MIXER OPERATOR (plastic prod.; rubber)	3	5	8161-194	MIXER, WALLPAPER COLOUR (chem., n.e.c.)	2	4
				8161-198	PAINT MIXER, HAND (paint & varn.)	2	4

B

		GED	SVP			GED	SVP
8161-202	COMPOUNDER (pharm. & toil.; soap)	2	4	8161-234	TRACER-POWDER BLENDER (explosives)	2	4
8161-206	COLOUR-WEIGHER-AND-MIXER (linoleum prod.)	2	4	8161-238	MIXER OPERATOR, CARBON PASTE (chem., n.e.c.)	2	3
8161-210	RUBBER-CEMENT MIXER (rubber)	2	4	8161-242	BATTERY-PASTE MIXER (chem., n.e.c.)	2	3
8161-214	VINYL-ASBESTOS-BLENDING- MACHINE TENDER (linoleum prod.)	2	4	8161-246	COATING-COMPOUND MIXER (chem., n.e.c.)	2	3
8161-218	MIXER (chem., n.e.c.; paint & varn.)	2	4	8161-250	FIBREGLASS-BINDER MIXER (chem., n.e.c.)	2	3
8161-222	CAUSTICISER MAN (chem., n.e.c.)	2	4	8161-254	LIME-SLUDGE MIXER (chem., n.e.c.)	2	3
8161-226	CLEANING-COMPOUNDS MIXER (chem., n.e.c.)	2	4	8161-258	NEUTRALIZER (soap)	2	3
8161-230	COLOUR MIXER (chem., n.e.c.)	2	4				

8161-262	NITROGLYCERINE NEUTRALIZER (explosives)	2	3	8161-326	POWDER BLENDER (explosives)	2	3
8161-264	MIXER, EXPLOSIVES (explosives)	2	3	8161-330	PROPELLANT BLENDER (explosives)	2	3
8161-266	ACID-CORRECTION MAN (syn. fibres)	2	3	8161-334	TEXTILE-TREATMENT-SOLUTION MIXER (chem., n.e.c.; textile)	2	3
8161-270	BATCH MIXER (soap)	2	3	8161-336	MIXER HELPER, WALLPAPER COLOUR (chem., n.e.c.)	2	3
8161-274	CARBON-BLACK PELLETIZER (chem., n.e.c.)	2	3	8161-338	BATTERY-ACID ADJUSTER (chem., n.e.c.)	2	2
8161-278	COATING MIXER MAN (pulp & paper)	2	3	8161-342	THINNER (paint & varn.)	2	2
8161-282	COMPOUNDER, LATEX (chem., n.e.c.)	2	3	8161-346	GLUE BLENDER (chem., n.e.c.)	2	2
8161-286	COPPER-SULPHATE MIXER (chem., n.e.c.)	2	3	8161-350	GROUND MIXER (chem., n.e.c.)	2	2
8161-290	FERMENTER, ANTIBIOTICS (pharm. & toil.)	2	3	8161-354	PULP-BLEACH-LIQUOR MAKER (chem., n.e.c.)	2	2
8161-294	MILLMAN (plastic prod.; rubber)	2	3	8161-358	SCREENER-AND-BLENDER TENDER, COKE (petrol. & coal prod.)	2	2
8161-298	MIXER, ASPHALT-ROOFING MATERIAL (petrol. & coal prod.)	2	3	8161-362	SODA-ROOM MAN (chem., n.e.c.)	2	2
8161-302	MIXER, FERTILIZER (chem., n.e.c.)	2	3	8161-366	SOLUTION MAN (chem., n.e.c.)	2	2
8161-306	MIXER, FOAM RUBBER (rubber)	2	3	8161-370	PLASTICS-BLENDING-MACHINE- TENDER HELPER (chem., n.e.c.)	2	2
8161-310	MIXER TENDER (chem., n.e.c.)	2	3	8161-374	CATALYST-OPERATOR HELPER, GASOLINE (chem., n.e.c.)	2	2
8161-314	MIXER, VISCOSE (chem., n.e.c.)	2	3	8161-378	CRUTCHER-OPERATOR HELPER (chem., n.e.c.)	2	2
8161-318	PESTICIDE MIXER (chem., n.e.c.)	2	3				
8161-322	PLASTICS-BLENDING-MACHINE TENDER (chem., n.e.c.)	2	3				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-H 47	I 567	3-2	7-4	91	0Y
	4	3	<u>3</u>		<u>3</u>	3	<u>3</u>		<u>4</u>		<u>2</u>						
											<u>1</u>						
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-H 347	I 567	2	4-2	319	23Y
			3	5		5			<u>4</u>	4	<u>3</u>						

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand the processes of mixing and blending chemicals and to apply the techniques necessary to operate and maintain equipment;
- numerical ability to calculate weights and proportions of materials required when following or developing formulae;
- form perception to make visual examinations of ingredients being mixed or blended to detect any abnormal reactions;
- eye-hand-finger co-ordination when conducting specific gravity, viscosity or other laboratory tests, or when weighing and measuring ingredients;
- manual dexterity to use hand tools to make minor repairs or adjustments to processing equipment;
- colour discrimination, at an extremely high level, for 8161-110 COLOUR-MAN, 8161-118 COLOUR MATCHER and 8161-194 MIXER, WALLPAPER COLOUR to distinguish minute differences in shades and colours, and to visualize the hue and brilliance which will result from mixing the primary colours in various proportions; colour discrimination is also required at a lesser degree of

aptitude for other occupations in this cluster that are concerned with mixing and blending paints, inks or soaps;

- physical capacity to perform light to heavy work which may involve lifting and carrying items weighing up to one hundred pounds;
- near visual acuity to correctly read weigh scales, measuring devices, gauges, dials, charts and thermometers;
- adaptability to working in unpleasant and, for some occupations, hazardous environmental conditions, such as intermittent noises from mixers or blenders, and fumes, odours or dusts from chemicals.

B

- learning ability to understand instructions and follow procedures for tending mixing and blending equipment;
- form perception to make routine visual comparisons of ingredients being mixed or blended to detect divergence from specifications;
- eye-hand co-ordination and manual dexterity to conduct quality tests on mixed or blended materials, to weigh or measure ingredients or to turn valves and controls to regulate processing variables;
- colour discrimination for occupations in which the accurate recognition of similarities or differences in colours is essential;
- physical capacity to move the hands and arms while performing

- light to heavy work, and to stoop or bend when cleaning equipment, lifting ingredients or obtaining test samples;
- near visual acuity to correctly read weigh scales, measuring devices, gauges, dials, charts and thermometers;

- capacity to endure considerable noise from mixers or blenders, and adaptability to working, for some occupations, where hazardous environmental conditions exist from fumes, odours or dusts from chemicals.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten or more years of general education;

- from six months to four years of on-the-job training and related experience in occupations of lesser complexity.

B

- eight years of general education;
- up to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may advance progressively to higher skilled occupations within their individual cluster or from Cluster B to A. Those who acquire additional training may advance to appropriate technician occupations, such as 2165-218 CHEMICAL-ENGINEERING TECHNICIAN, and 2117-248 CHEMICAL TECHNICIAN. Experienced workers with supervisory potential may advance to 8160-134 FOREMAN, MIXING AND BLENDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to occupations requiring similar skills within the chapter. With limited additional training, transfer may also be possible to other occupations in Major Group 81/82, PROCESSING OCCUPATIONS, where the work requires similar skill levels.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things or objects.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria, for example utilizing test results to verify quality of product;
- the precise attainment of set limits, tolerances or standards.

B

- repetitive or short cycle operations carried out according to set procedures;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

FILTERING, STRAINING AND SEPARATING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

WORK PERFORMED

This chapter includes occupations concerned with filtering, straining and separating chemicals and related materials. Worker functions include: operating or tending equipment that separates, collects, extracts, filters, purifies, recovers, removes, screens or washes chemicals and related substances; and comparing samples of processed material with specified standards. Work activities include: turning valves, starting pumps or conveyors and adjusting controls of equipment to regulate process; transferring materials to storage tanks; recording operating or production data; obtaining product samples; conducting standard tests; and cleaning equipment or work areas.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8163-110	BITUMEN-EXTRACTION-PLANT OPERATOR (petrol. & coal prod.)	3	6	8163-130	NITROGLYCERINE SEPARATOR (explosives)	3	4
8163-114	FILTER OPERATOR (chem., n.e.c.)	3	6	8163-134	ION-EXCHANGE OPERATOR (non-ferrous metal)	3	4
8163-118	CAUSTIC OPERATOR (chem., n.e.c.)	3	5	8163-138	PLASTICS-STRAINER OPERATOR (plastic prod.)	3	4
8163-122	BENZOL AGITATOR OPERATOR (petrol. & coal prod.)	3	5	8163-142	PURIFICATION OPERATOR (chem., n.e.c.)	3	4
8163-126	DESULPHURIZER OPERATOR (petrol. & coal prod.)	3	5	8163-146	RECOVERY MAN (soap)	3	4
8163-128	ACIDULATION PLANT TENDER (animal & veg. oil)	3	5	8163-150	SETTLER-FILTERER (chem., n.e.c.)	3	4
				8163-154	VISCOSE FILTERMAN (chem., n.e.c.)	3	4

B

		GED	SVP			GED	SVP
8163-155	FILTER-PRESS TENDER (any ind.)	3	3	8163-206	WASHER AND DRIER (plastic prod.)	2	3
8163-156	WAX BLEACHER (misc. prod. fab., n.e.c.)	3	3	8163-210	SPINNERET PACK PREPARER (syn. fibres)	2	2
8163-158	BRINEMAN (chem., n.e.c.)	2	4	8163-214	NITROCELLULOSE FINISHER (explosives)	2	2
8163-162	NAPHTHALENE TENDER (petrol. & coal prod.)	2	4	8163-216	NITROCELLULOSE SCREENER AND WEIGHER (explosives)	2	2
8163-168	STRAINER TENDER (rubber)	2	3	8163-218	CENTRIFUGE TENDER (soap)	2	2
8163-170	CHILLER TENDER (chem., n.e.c.)	2	3	8163-222	INK PURIFIER (chem., n.e.c.)	2	2
8163-174	DEHYDRATING-PRESS TENDER (explosives)	2	3	8163-226	MERCURY RECOVERER (chem., n.e.c.)	2	2
8163-182	LIQUOR MAKER (chem., n.e.c.)	2	3	8163-234	SEPARATION-PRESS TENDER (chem., n.e.c.)	2	2
8163-186	OIL RECLAIMER (chem., n.e.c.)	2	3	8163-238	SODA DIALYZER (chem., n.e.c.)	2	2
8163-190	PAN TENDER (chem., n.e.c.)	2	3	8163-242	FILTRATION HELPER (any ind.)	2	2
8163-194	SCREENER (explosives)	2	3				
8163-198	SCREENMAN, COKE (iron & steel; petrol. & coal prod.)	2	3				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	4		L-M 47	I-B 567	3	6-4	91 913	Y0
	4			<u>4</u>	<u>4</u>				<u>3</u>	4	3							
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5		L-H 47	I 567	3-2	4-2	319	23Y
			5			5			<u>4</u>	4	4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand the processes for filtering, straining and separating chemicals and to apply the techniques and procedures necessary to operate or tend processing equipment;
- form perception to recognize differences in compositional characteristics of processed materials, or to perform titrations or other tests;
- eye-hand-finger co-ordination, and manual dexterity to replace parts, lubricate equipment, attach hoses, conduct quality tests and adjust valves or controls;
- physical capacity to perform light to heavy work, such as lifting and carrying filters, couplings and hand tools, or pushing and pulling hand trucks, carts or buggies;

- near visual acuity to read gauges and instruments, or to detect leaks, clogged orifices, or other equipment and material irregularities;
- colour vision to detect colour changes in chemicals to indicate progress of process;
- adaptability to working in unpleasant and for some occupations, hazardous conditions, such as in proximity to equipment that creates considerable noise, exposure to toxic fumes, and odours or dusts, or handling explosive materials.

Workers in Cluster A also require:

- spatial perception to visualize the functioning of equipment and sequence of processing operations in order to detect equipment malfunctions or material defects.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

- A**
- ten years of general education;

- up to two years of on-the-job training and related experience, depending on the complexity of the occupation.

- B**
- eight to ten years of general education;
 - from one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may advance to more highly skilled occupations within the chapter. Those who qualify through additional training may advance to 2117-248 CHEMICAL TECHNICIAN, and 5131-150 TECHNICAL SALESMAN, CHEMICALS. Others may advance to quality control occupations, such as 8176-110 CELLULOSE FILM SOLUTIONS TESTER and 8176-112 TEST ANALYST, TITANIUM PIGMENTS. Experienced workers with supervisory potential may advance to 8160-122 FOREMAN, FILTERING, STRAINING AND SEPARATING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within the cluster or to appropriate occupations in other chapters, such as 8179-126 CHEMICAL-PROCESS OPERATOR, BATCHING; 8113-210 SCREENMAN; and 8299-154 SCREEN TENDER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social activities, carried on in relation to processes, machines and techniques;
- dealing with things or objects.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments**A**

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, for example conducting tests on product samples to determine product acceptability.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

DISTILLING, SUBLIMING AND CARBONIZING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

WORK PERFORMED

This chapter includes occupations concerned with distilling, subliming and carbonizing chemicals and related materials to produce or treat products such as gasoline, lubricating oils and petrochemicals, natural or industrial gases, acids, caustics and other chemicals. Worker functions include: operating or tending equipment such as distillation units, coke ovens, stills, alkylation units, evaporators, absorption towers or fractionating columns; compiling and recording test information and instrument readings; comparing test results with specified standards to detect processing irregularities; and operating coke-oven equipment such as larry-cars or pusher machines. Worker activities include: turning valves, operating pumps or moving levers or switches to start, regulate or stop process; obtaining product samples; conducting tests; patrolling equipment to detect leaks, hazards or malfunctions; and cleaning and lubricating equipment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8165-110	PETROLEUM-PROCESS OPERATOR (petrol. & coal prod.)	4	7	8165-162	LIGHT-OIL-EXTRACTOR OPERATOR (petrol. & coal prod.)	3	6
8165-114	ALKYLATION OPERATOR (petrol. & coal prod.)	4	7	8165-164	PUMPMAN, COKE BY-PRODUCTS (petrol. & coal prod.)	3	5
8165-118	DISTILLATION OPERATOR (chem., n.e.c.)	4	7	8165-166	BATCH-STILL OPERATOR (chem., n.e.c.)	3	5
8165-122	TREATER (petrol. & coal prod.)	4	7	8165-170	BURNER OPERATOR (petrol. & coal prod.)	3	5
8165-126	CONTROL MAN (petrol. & coal prod.)	3	7	8165-174	CELL OPERATOR (chem., n.e.c.)	3	5
8165-130	RECOVERY OPERATOR (chem., n.e.c.)	4	6	8165-178	DISSOLVER PRECIPITATOR (chem., n.e.c.)	3	5
8165-134	COKE-PLANT-BY-PRODUCTS OPERATOR (chem., n.e.c.)	3	7	8165-182	PETROLEUM-PROCESS-OPERATOR HELPER (petrol. & coal prod.)	3	5
8165-138	COLUMN OPERATOR (chem., n.e.c.)	3	6	8165-186	SATURATOR MAN (chem., n.e.c.)	3	5
8165-142	LIQUEFACTION-PLANT OPERATOR (chem., n.e.c.)	3	6	8165-190	ACID-PLANT OPERATOR (chem., n.e.c.)	3	4
8165-146	GAS-PLANT OPERATOR (chem., n.e.c.)	3	6	8165-194	FUEL-GAS TREATER (petrol. & coal prod.)	3	4
8165-150	DISTILLATION OPERATOR (petrol. & coal prod.)	3	6	8165-198	HYDROGEN-PROCESS OPERATOR (chem., n.e.c.)	3	4
8165-154	GASMAN (oil & nat. gas)	3	6	8165-202	TAR-ACID EXTRACTOR (petrol. & coal prod.)	3	4
8165-158	GLYCERINE-REFINERY OPERATOR (soap)	3	6	8165-206	VACUUM-PAN OPERATOR (mining & quarrying)	3	4

B

		GED	SVP			GED	SVP
8165-210	TREATER HELPER (petrol. & coal prod.)	3	4	8165-222	DISTILLATION-OPERATOR HELPER (chem., n.e.c.)	3	3
8165-214	ALKYLATION TOWERMAN (petrol. & coal prod.)	3	3	8165-226	ACETYLENE-PLANT ATTENDANT (chem., n.e.c.)	2	4
8165-218	BLEACHING-SOLUTION MAKER (chem., n.e.c.)	3	3	8165-230	CELL-OPERATOR HELPER (chem., n.e.c.)	2	4

		GED	SVP
8165-240	CRYSTALLIZER TENDER (chem., n.e.c.; explosives)	2	3
8165-242	STILL TENDER (chem., n.e.c.)	2	3

		GED	SVP
8165-244	BATH-MIX-SOLVENT RECOVERER (chem., n.e.c.)	2	2
8165-246	DISTILLATION-OPERATOR HELPER (petrol. & coal prod.)	2	2

C

		GED	SVP
8165-232	LARRY-CAR OPERATOR (petrol. & coal prod.)	2	3

		GED	SVP
8165-234	OPERATOR, DOOR MACHINE (petrol. & coal prod.)	2	3
8165-238	PUSHERMAN (petrol. & coal prod.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	5	5	L-M 247	I-B 567	4-3	7-4	91	Y08	
		3	3	<u>4</u>						4	3							
B	4	4	4	4	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	4	5	L-H 247	I-B 3567	3-2	4-2	913	2Y8	
	3				<u>4</u>				<u>4</u>	5	4						23Y8	
C	4	4	5	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	4	5	M 47	B 367	2	3	391	23Y	
			4			4												

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand chemical refining and processing instructions and to apply them in operating and controlling distilling, subliming and carbonizing equipment;
- spatial perception to interpret abnormalities in equipment operation from panelboard indicators;
- form perception to compare readings of gauges, meters or recording instruments, and to detect indications of processing irregularities;
- clerical ability to record gauge and instrument readings, production and equipment performance data and test results;
- eye-hand-finger co-ordination, manual dexterity, and the ability to extend the arms and hands to adjust controls or turn valves, clean and lubricate equipment and make minor repairs;
- physical capacity for light to heavy work involving frequent lifting of objects weighing up to fifty pounds;
- agility to climb stairs and ladders and maintain equilibrium on catwalks or platforms when monitoring operation of large processing equipment;
- capacity to perform job while exposed to noises from pumps, compressors or stills;
- adaptability to working where there may be exposure to odours, acids or gases, and risk of burns from chemicals or gas explosions.

B

- learning ability to understand instructions and follow procedures for tending or helping to operate chemical processing equipment;
- form perception to detect malfunctioning equipment, compare indicator and gauge readings and perform routine tests;
- clerical perception to accurately record production data on log sheet;

- eye-hand-finger co-ordination and manual dexterity to make minor repairs and adjustments using hand tools, to conduct titration, specific gravity and other tests, and to adjust controls;
- physical capacity to lift and carry objects weighing up to fifty pounds;
- agility to climb stairs or ladders and walk on platforms or catwalks while monitoring processing operations;
- adaptability to unpleasant and hazardous environmental conditions, such as working close to pumps, compressors or furnaces that create considerable noise; working with explosive materials; and exposure to chemical fumes, odours and dusts.

C

- learning ability to understand and follow detailed but uninvolved written or oral instructions;
- spatial perception, for example, to operate cars on rails to transport coke used to charge ovens;
- eye-hand co-ordination and manual dexterity to operate self-propelled vehicles, such as larry-cars or pusher machines;
- physical capacity to lift and carry objects weighing up to fifty pounds; to reach for and turn valves or controls; to climb and descend stairs or ladders when inspecting, cleaning or observing the operation of equipment; and to stoop or bend when sorting, filling, loading or unloading bags of materials;
- capacity to work in proximity to coke ovens and furnaces that generate considerable heat;
- adaptability to work situations where there is risk of injury from gas explosions or by falls from material handling conveyances;
- capacity to work in an environment where fumes and gases may cause discomfort.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- twelve years of general education; and
- one to four years of experience in jobs of a lesser complexity and on-the-job training;

B

- ten to twelve years of general education;
- six months to three years of experience and on-the-job training.

C

- eight years of general education;
- up to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Workers in this cluster with supervisory abilities and a thorough knowledge of processing operations may advance to 8160-118 FOREMAN, DISTILLING, SUBLIMING AND CARBONIZING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Workers who acquire the necessary qualifications may advance to occupations in research or development, such as 2117-248 CHEMICAL TECHNICIAN.

B

Workers in this cluster may advance to occupations in Cluster A. Experienced workers with supervisory ability may advance to 8160-118 FOREMAN, DISTILLING, SUBLIMING AND CARBONIZING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

C

Workers in this cluster who show potential may advance to positions in Clusters A or B.

Transfer

Because of the specialized nature of the work, transfer possibilities for workers in this chapter are limited, however, some workers may transfer to other occupations requiring similar skills within the chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for B and C:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, as when checking product quality against production specifications;
- performing adequately under stress when confronted with the critical or unexpected or taking risks.

B and C

- repetitive or short cycle operations carried out according to set procedures or sequence;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

Additionally, for B:

- performing adequately under stress when confronted with the critical or unexpected or taking risks, such as working in areas of possible explosions and exposure to deadly gas or burns from chemicals.

ROASTING, COOKING AND DRYING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

WORK PERFORMED

This chapter includes occupations concerned with roasting, cooking and drying chemicals and related materials to prepare them for subsequent use or further processing. Worker functions include: operating or tending chemical processing equipment to liquefy, dry, char, purify, concentrate, polymerize, or change composition of chemical materials; comparing test results with specifications to determine quality of product; and compiling and recording test results and production data. Work activities include: weighing and dumping ingredients into equipment; collecting test samples; conducting specific gravity, acidity or other tests; patrolling area to detect defects in equipment or processing irregularities; performing minor repairs; and cleaning equipment or work areas.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8167-110	ROASTER, CHEMICAL (chem., n.e.c.)	3	6	8167-314	AMMONIA-PLANT OPERATOR (chem., n.e.c.)	3	5
8167-114	THERMAL-ACID-EQUIPMENT OPERATOR (chem., n.e.c.)	3	6	8167-318	OXIDATION OPERATOR, NITRIC ACID (chem., n.e.c.)	3	5
8167-118	RECOVERY-PLANT OPERATOR (chem., n.e.c.)	3	6	8167-322	SULPHURIC-ACID-PLANT OPERATOR (chem., n.e.c.)	3	5
8167-210	SOAP BOILER (soap)	3	6	8167-326	EVAPORATOR OPERATOR (any ind.)	3	5
8167-214	POLYMERIZATION-KETTLE OPERATOR (chem., n.e.c.)	3	6	8167-134	HEATER, COKE OVENS (petrol. & coal prod.)	3	4
8167-218	VARNISH MAKER (paint & varn.)	3	6	8167-138	RING-FURNACE OPERATOR (electric. equip.)	3	4
8167-122	CARBON-BLACK-FURNACE OPERATOR (petrol. & coal prod.)	3	5	8167-142	ACID MAKER (chem., n.e.c.)	3	4
8167-126	OVEN-CONTROL MAN, ELECTRODES (electric. equip.)	3	5	8167-226	DIGESTER OPERATOR (chem., n.e.c.)	3	4
8167-130	LIME-KILN OPERATOR (chem., n.e.c.)	3	5	8167-230	PRECIPITATOR OPERATOR (chem., n.e.c.)	3	4
8167-222	AUTOCLOVE OPERATOR (chem., n.e.c.)	3	5	8167-270	SOAPFLAKE-DRIER OPERATOR (soap)	3	4
				8167-330	TOWERMAN (soap)	3	4

B

		GED	SVP			GED	SVP
8167-146	CARBON-BLACK-FURNACE TENDER (petrol. & coal prod.)	3	3	8167-242	KETTLE TENDER (chem., n.e.c.; soap)	2	3
8167-154	CALCINER TENDER (petrol. & coal prod.)	2	3	8167-274	DRYHOUSE TENDER (explosives)	2	3
8167-162	ROTARY-FURNACE TENDER (chem., n.e.c.)	2	3	8167-278	NITROCELLULOSE-DRIER TENDER (explosives)	2	3
8167-170	CHARCOAL BURNER, BEEHIVE KILN (petrol. & coal prod.)	2	3	8167-282	SOLVENT-RECOVERY TENDER (explosives)	2	3
8167-175	STANDPIPE MAN (petrol. & coal prod.)	2	3	8167-334	SPRAY-DRIER TENDER (paint & varn.)	2	3
8167-234	CADMIUM-LIQUOR MAKER (paint & varn.)	2	3	8167-338	EVAPORATOR TENDER (chem., n.e.c.)	2	3
8167-238	DEVULCANIZER TENDER (rubber)	2	3	8167-178	LEAD-OXIDE MAKER (chem., n.e.c.)	2	2

CHAPTER 8167

8167-246	ASPHALT-HEATER TENDER (petrol. & coal prod.)	2	2	8167-286	ASPHALT-PLANT-DRIER TENDER (petrol. & coal prod.)	2	2
8167-250	RECOVERY-VAT TENDER (plastic prod.)	2	2	8167-290	DRIER TENDER (chem., n.e.c.)	2	2
				8167-342	FLAKER TENDER (chem., n.e.c.; explosives)	2	2

C

		GED	SVP			GED	SVP
8167-150	RING-FURNACE-OPERATOR HELPER (electric. equip.)	2	3	8167-186	CARBON-BLACK-FURNACE-OPERATOR HELPER (petrol. & coal prod.)	2	2
8167-158	HEATER, HELPER, COKE OVENS (petrol. & coal prod.)	2	3	8167-190	OVEN LOADER (non-metal min. prod., n.e.c.)	2	2
8167-166	THERMAL-ACID-EQUIPMENT-OPERATOR HELPER (chem., n.e.c.)	2	3	8167-346	MILLED-RUBBER COOLER (rubber)	2	2
8167-174	RECOVERY-PLANT-OPERATOR HELPER (chem., n.e.c.)	2	3	8167-350	SULPHURIC-ACID-PLANT-OPERATOR HELPER (chem., n.e.c.)	2	2
8167-182	LIME-KILN-OPERATOR HELPER (chem., n.e.c.)	2	2	8167-294	DRIER-TENDER HELPER (chem., n.e.c.)	1	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	4	L-M 247	I 567	3-2	6-4	91	0Y	
				<u>4</u>	<u>4</u>		<u>4</u>		<u>4</u>	4	5							
B	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	L-M 34	I 3567	3-2	3-2	913	2Y0	
			5				<u>4</u>		<u>4</u>	4							23Y	
C	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	4	5	L-H 234	I-O 3567	2-1	3-2	319	23Y	
			5			5	<u>3</u>		<u>3</u>									

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand chemical roasting, cooking and drying processes, and to carry out detailed written or oral work instructions;
- form perception to make accurate visual comparisons of materials being processed to detect divergence from specified standards, or to note deviations in gauge or instrument readings which may indicate processing irregularities;
- eye-hand co-ordination to read gauges or instruments and simultaneously adjust valves or controls; to use measuring devices such as hydrometers or weigh scales; and to fill test containers with samples of processed materials;

- manual dexterity to conduct tests on product samples or to perform minor maintenance on processing equipment;
- physical capacity to ascend and descend ladders or stairs, to stoop or bend, push or pull hand trucks and lift and carry various materials, occasionally weighing one hundred pounds;
- ability to work while exposed to intermittent noise, heat from processing equipment and fumes, odours or dusts.

Additionally, for Cluster A:

- spatial perception to interpret abnormalities in equipment operation from panelboard indicators.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

- A**
- eight to eleven years of general education;

- up to two years of on-the-job training and related experience.

- B and C**
- eight to ten years of general education;
 - up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Experienced workers in this cluster with supervisory potential may advance to 8160-138 FOREMAN, ROASTING, COOKING AND DRYING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

B

Some workers in this cluster who acquire the necessary experience and training may advance to appropriate occupations in Cluster A.

C

Workers in this cluster who demonstrate ability may advance to higher skilled occupations in Clusters B and A.

Transfer

A and B

Some workers in these clusters may, with limited additional training, transfer to other occupations concerned with operating or tending equipment that requires basically similar skills, such as appropriate occupations in Chapters 8115, MELTING AND ROASTING OCCUPATIONS, MINERAL ORES; and 8151, FURNACEMEN AND KILNMEN: CLAY, GLASS AND STONE.

C

Some workers in this cluster may transfer to other occupations requiring similar basic skills within the cluster. Possibilities for transfer may also be to appropriate occupations in Minor Group 815, CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS; 816/817 CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- working with things or objects, such as valves, gauges or hand tools.

Additionally, for Clusters B and C:

- routine, concrete and organized activities.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria, for example analyzing test results to determine product acceptability;
- the precise attainment of set limits, tolerances or standards.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

C

- repetitive or short cycle operations carried out according to set procedures or sequences, such as cleaning and lubricating equipment, or obtaining product samples for laboratory analysis;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

CRUSHING AND GRINDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

WORK PERFORMED

This chapter includes occupations concerned with crushing and grinding chemicals, coal, rubber, plastic, and other related materials. Worker functions include: operating or tending grinders, crushers, pulverizers and machines that cut, chip or shred materials; and comparing processed materials with specified standards to ensure product acceptability. Work activities include: dumping ingredients into and removing them from machines; observing equipment operation to detect stoppages or malfunctions; adjusting control levers and turning valves to regulate rate of feed, temperature, moisture content, or size of particules; weighing ingredients or bags of processed materials; and cleaning equipment and work areas.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8171-110	PULVERIZER OPERATOR (petrol. & coal prod.)	3	4	8171-154	LEAD-OXIDE-MILL TENDER (chem., n.e.c.)	2	3
8171-114	GRINDER OPERATOR (rubber)	3	3	8171-158	SCRAP-RUBBER GRINDER (rubber)	2	3
8171-118	COKE GRINDER (petrol. & coal prod.)	2	4	8171-162	BREAKER TENDER (petrol. & coal prod.)	2	2
8171-122	PULVERIZER (chem., n.e.c.)	2	4	8171-166	COLOUR GRINDER (chem., n.e.c.)	2	2
8171-126	PULVERIZING-AND-SIFTING EQUIPMENT TENDER (explosives)	2	4	8171-170	CRUSHER TENDER (linoleum prod.)	2	2
8171-130	STONE-MILL TENDER (paint & varn.)	2	4	8171-174	DICING-MACHINE TENDER (plastic prod.)	2	2
8171-134	WHEEL-MILL TENDER (explosives)	2	4	8171-178	HYDRATOR TENDER (cement, stone & clay)	2	2
8171-138	CUTTERMAN (syn. fibres)	2	3	8171-182	PLASTICS GRINDER (plastic prod.)	2	2
8171-142	GRINDER TENDER (chem., n.e.c.)	2	3	8171-186	SCRATCHER TENDER (linoleum prod.)	2	2
8171-146	BLACK-POWDER GRAINER AND GLAZER (explosives)	2	3	8171-190	SHREDDING-MACHINE TENDER (chem., n.e.c.)	2	2
8171-150	DOPE-HOUSE MAN (explosives)	2	3	8171-194	RUBBER-CUTTING-MACHINE FEEDER (rubber)	2	2
				8171-198	SOAP CHIPPER (soap)	2	2

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L-H 347	I 57	3-2	4-2	913	Y2
		5	5	<u>3</u>	4			<u>4</u>	4							Y23

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow detailed but uninvolved written or oral instructions relating to the operation of crushing and grinding machines;
- form perception to visually detect differences in size and shape of cut, ground, crushed or chipped material;
- eye-hand co-ordination to adjust gauges, valves and controls or remove dirt and other foreign material from conveyors;
- manual dexterity to use hand tools to perform minor adjustments or repairs on machines;
- colour discrimination essential for 8171-178 HYDRATOR

TENDER and 8171-182 PLASTICS GRINDER to determine quality of processed materials;

- physical capacity to perform light to heavy work, to reach for and handle various objects and materials, and to stoop or bend when inspecting, maintaining or cleaning equipment;
- near visual acuity for reading gauges, dials or thermometers and performing minor repairs or adjustments to machines;
- capacity for sustaining attention to functioning machines while exposed to continuous noise from grinders, crushers, conveyors and other machinery;
- adaptability to working when exposed to fumes, dusts and odours

resulting from crushing and grinding chemicals or materials such as

coal, paint or limestone, and for some occupations exposure to explosive materials and possible injury.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to other more skilled occupations within this chapter. Those with supervisory potential may advance to 8160-114 FOREMAN, CRUSHING AND GRINDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some workers transfer to occupations requiring similar skills within this chapter. With limited additional training, others may transfer to some occupations in Chapters 8111, CRUSHING AND GRINDING OCCUPATIONS, MINERAL ORES; and 8153, SEPARATING, CRUSHING, GRINDING AND MIXING OCCUPATIONS: CLAY, GLASS AND STONE.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non social work, carried on in relation to processes, machines and techniques;
- working with mechanical things and objects such as machines or equipment and hand tools;
- routine, concrete and organized activities.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle tasks, carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working and job problems.

COATING AND CALENDERING OCCUPATIONS, CHEMICAL AND RELATED MATERIALS

WORK PERFORMED

This chapter includes occupations concerned with covering a variety of materials such as paper, cloth, asbestos, felt, and rubber or plastic sheeting with protective, decorative or other coatings; imparting a desired finish or ensuring uniform thickness in materials; and forming or pressing materials into sheets or layers. Worker functions include: operating or tending machines that apply coatings to materials or objects and smooth, glaze, bond, thin or compress, laminate, vulcanize or saturate materials in sheet or roll form; feeding and offbearing materials from coating, saturating or calendering machines; and comparing and examining products to detect flaws such as tears, blisters, streaks or lumps, and ensure acceptability to specifications. Work activities include: mounting rolls of material on machines; threading materials through feed mechanisms; adjusting controls or valves to regulate temperatures, flow rates for coating solutions and pressure of feed rollers; and measuring thickness of coating or of material produced.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8173-110	COATING-EQUIPMENT OPERATOR (metal stamp., press. & coat)	3	5	8173-190	CALENDER OPERATOR, FLOOR TILE (linoleum prod.)	3	4
8173-178	CALENDER OPERATOR (plastic prod.; rubber)	3	5	8173-126	CARBON-COATER-MACHINE OPERATOR (misc. prod. fab., n.e.c.)	3	4
8173-182	CALENDER OPERATOR, MULTI-ROLL (plastic prod.; rubber)	3	5	8173-130	PLASTIC-SPREADING-MACHINE OPERATOR (plastic prod.)	3	4
8173-114	LATEX-COATING-MACHINE OPERATOR (textile)	3	5	8173-134	RUG-COATING-MACHINE OPERATOR (textile)	3	4
8173-186	SPONGE-RANGE OPERATOR (textile)	3	5	8173-194	SPONGE-PRESS OPERATOR (rubber)	3	4
8173-118	COATING-MACHINE TENDER (paper prod.; textile)	3	5	8173-198	CALENDER LET-OFF MAN (plastic prod.; rubber)	3	3
8173-122	COATER, ASPHALT (asphalt roof.)	3	4	8173-234	HOSE MAKER, MACHINE (rubber)	3	3

B

		GED	SVP			GED	SVP
8173-238	FLOOR-TILE BACKER (linoleum prod.)	3	3	8173-142	SATURATING-MACHINE TENDER (asphalt roof.; linoleum prod.)	2	3
8173-138	BUCKLE-STRAP-MACHINE TENDER (rubber)	2	3	8173-146	SPREADER MAN (rubber; textile)	2	3
8173-150	COATING-MACHINE TENDER (linoleum prod.)	2	3	8173-214	CALENDER-WIND-UP TENDER (plastic prod.; rubber)	2	2
8173-202	LAMINATING-MACHINE TENDER (rubber)	2	3	8173-210	CALENDERING-MACHINE TENDER (plastic prod.; rubber)	2	2
8173-206	PLANISHING-PRESS TENDER (plastic prod.)	2	3	8173-154	COATING-MACHINE FEEDER (linoleum prod.)	2	2
				8173-158	SATURATING-MACHINE FEEDER (asphalt roof.; linoleum prod.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5	L-M 47	I 57 I 357	3	5-3	91 913	Y0	
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-H 347	I 567	3-2	3-2	319	23Y	
			5			5	<u>3</u>		<u>4</u>	4								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply the procedures and techniques of operating or tending coating or calendering machines;
- form perception to visually compare processed materials to detect physical defects such as tears, slits, bubbles or wrinkles;
- eye-hand co-ordination to perform such activities as threading sheet material through machine feed mechanisms or operating an overhead hoist to position rolls of material in machine;
- manual dexterity to use hand tools to adjust and maintain machines or to turn valves and controls to regulate coating or calendering processes;
- physical strength to perform work ranging from light to heavy, such as lifting and carrying containers of coating solution, rolls of material and machinery parts, or pushing and pulling loaded hand trucks;

stooping or bending may be necessary for some occupations in Cluster B;

- near visual acuity to read gauges, dials, thermometers and micrometers, or to detect flaws in products;
- capacity to work close to curing ovens and calendering machines that generate considerable heat, and to pumps and coating machines that are extremely noisy;
- adaptability to working where fumes, odours and dusts may present a physical hazard as a result of inhalation or action on the skin.

Additionally, for Cluster A:

- spatial perception to visualize specified thickness of finished product or coating in order to correctly adjust machine parts, such as scraper blades, trimming knives or rollers.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;

- up to one year of on-the-job training, including experience as a helper, tender or other related production occupation.

B

- eight years of general education;
- up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Some occupations in Cluster B are considered entry jobs and advancement may be to higher skilled occupations in Cluster A. Similarly, experienced workers in Cluster A may advance to other occupations within that cluster or to appropriate occupations in Chapter 8176, INSPECTING, TESTING AND SAMPLING OCCUPATIONS: CHEMICAL, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING. Those with supervisory potential may advance to 8160-110 FOREMAN, COATING AND CALENDERING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to other occupations requiring similar skills within this chapter. Also, some workers may transfer to appropriate coating and calendering occupations in Chapters 8253, PAPERMAKING AND FINISHING OCCUPATIONS, and 8275, TEXTILE FINISHING AND CALENDERING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- work which is essentially non-social in nature, and carried on in relation to processes and machines;
- working with objects, such as hand tools and measuring devices and mechanical things, such as coating or calendering machines;
- work which is routine, concrete and organized, such as operating equipment according to specific and detailed instructions.

Temperaments

- the precise attainment of set limits or standards as specified on work order instructions;
- the evaluation of information against measurable or verifiable criteria, for example, comparing processed material with specified standards to determine product quality.

B

Interests

- routine, concrete and organized work, for example, tending processing machines according to well defined sequential instructions;
- working with things or objects;
- non-social activities, carried out in a machine-oriented environment.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences, such as feeding or tending processing equipment;
- activities which are performed under specific instruction allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits or standards.

INSPECTING, TESTING AND SAMPLING OCCUPATIONS: CHEMICAL, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING

WORK PERFORMED

This chapter includes occupations concerned with quality control activities in the processing of chemicals, petroleum, rubber, plastic and related materials. Worker functions include: compiling and interpreting information resulting from tests to detect processing irregularities; comparing products with specifications to ensure standards are met; manipulating laboratory equipment and special devices to test products for characteristics such as density, abrasion resistance, viscosity, purity or moisture content; recording inspection data; and handling and moving or sorting articles and materials during inspection process. Work activities include: collecting and identifying product samples; preparing test equipment for use; and weighing and measuring materials.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8296-110T	INSPECTOR, PHARMACEUTICALS AND TOILETRIES (pharm. & toil.)	4	7	8176-118	COMPRESSED-GASES TESTER (chem., n.e.c.)	3	5
8176-110	CELLULOSE FILM SOLUTIONS TESTER (chem., n.e.c.)	4	5	8176-126	CARGO INSPECTOR (oil & nat. gas; petrol. & coal prod.)	3	5
8176-112	TEST ANALYST, TITANIUM PIGMENTS (chem., n.e.c.)	4	5	8176-130	LABORATORY TESTER (petrol. & coal prod.)	3	4

B

		GED	SVP			GED	SVP
8176-114	TESTER, PLASTIC-MATERIALS (plastic prod.)	3	5	8176-122	ASPHALT-ROOFING-MATERIALS INSPECTOR (asphalt roof.)	3	5
8176-116	CARBON AND GRAPHITE INSPECTOR (non-metal. min. prod., n.e.c.)	3	5	8176-134	RUBBER TESTER (rubber)	3	4
				8176-138	COKE SAMPLER AND TESTER (petrol. & coal prod.)	3	3

C

		GED	SVP			GED	SVP
8176-142	MILL-ROLL TESTER (chem., n.e.c.)	3	3	8176-154	RECLAIMED-RUBBER INSPECTOR (rubber)	2	3
8176-146	SPONGE-RUBBER INSPECTOR (rubber)	3	3	8176-166	ROLL INSPECTOR, PLASTIC FILM (chem., n.e.c.)	2	2
8176-150	DIELECTRIC TESTER (chem., n.e.c.; rubber)	3	3	8176-170	INSPECTOR, VINYL FABRICS (plastic prod.)	2	2

D

		GED	SVP			GED	SVP
8176-158	SAMPLEMAN (chem., n.e.c.)	2	3	8176-162	SAMPLER (petrol. & coal prod.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	5	4	L 247	I-B 67	4-3	7-4	91	0Y
				4	4			4			3						
B	3	3	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	5	5	L-H 2347	I 7	3	5-3	91	0Y
	4	4		4	4	4	<u>4</u>	3		4	3						
C	4	4	3	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4	L-M 47	I	3-2	3-2	139	Y0
			4	<u>3</u>					<u>4</u>		5						Y2
			5														
D	4	4	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	5	5	L 24	O-B 7	2	3	13	23

APTITUDES AND CAPACITIES

Workers in these clusters require:

A and B

- learning ability to understand and apply a variety of written and oral test procedures, and reasoning ability to make judgments regarding quality of products and materials;
- numerical ability to accurately determine percentages, weights or densities;
- form perception to examine products for physical defects such as tears, wrinkles or streaks;
- clerical perception to avoid errors when recording or reviewing test results or other inspection data;
- eye-hand co-ordination and manual dexterity to use test equipment and measuring devices;
- physical ability to ascend and descend ladders or stairs and to perform light to heavy work;
- near visual acuity to examine materials for physical defects and to accurately read dials, instruments and gauges;
- colour vision for tests which rely on colour indications, such as examining asphalt shingles for colour conformity;
- capacity to work while exposed to fumes, odours or dusts.

Additionally, for workers in Cluster A:

- spatial perception to visualize all stages of production operations when preparing quality control reports;
- adaptability to working both inside and outside, and to working

where there is risk of body injuries from explosive gases, or burns from industrial chemicals.

Additionally, for workers in Cluster B:

- ability to stoop or bend when shovelling materials or pushing wheelbarrows.

C and D

- learning ability to understand and follow routine inspection procedures;
- eye-hand co-ordination to use weigh scales, micrometers, scissors, paper cutters or knives;
- manual dexterity to trim and tag samples, remove and repair defective areas or to prepare testing devices;
- physical ability to perform light to medium work, to reach for and handle test equipment or samples and to feel and finger materials to detect physical defects.

Additionally, for workers in Cluster C:

- form perception to make accurate visual comparisons of products and materials;
- near visual acuity to read graduations on balance scales, thermometers or other measuring devices.

Additionally, for workers in Cluster D:

- clerical perception to avoid errors when recording inspection data;
- agility to ascend and descend stairs when collecting product samples;
- adaptability to working inside and outside and in areas where there are fumes, odours, dusts and gases.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- six months to two years of combined on-the-job training and experience.

B

- ten years of general education;

C

- eight to ten years of general education;
- up to three months of on-the-job training.

D

- eight years of general education;
- up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement****A, B and C**

Experienced workers in these clusters with supervisory ability may advance to 8160-126 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Others who acquire the qualifications may advance to occupations such as 5131-150 TECHNICAL SALESMAN, CHEMICALS; 5133-146 SALES REPRESENTATIVE, PLASTIC PRODUCTS; 5133-154 SALES REPRESENTATIVE, RUBBER PRODUCTS; and 2117-248 CHEMICAL TECHNICIAN.

D

These occupations are considered entry jobs, and advancement is normally to higher skilled occupations within the chapter.

Transfer

Because of the specialized nature of the work, transfers are limited but may be to other occupations requiring similar skills within this chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A and B**Interests**

- work which is basically non-social in nature and is carried on in relation to processes, machines and techniques;
- dealing with things and objects, such as measuring devices and test equipment.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example, using test equipment to verify quality of product;
- the precise attainment of set limits, tolerances or standards.

C and D**Interests**

- dealing with things and objects;
- routine, concrete and organized work.

Additionally, for Cluster C:

- non-social work carried on in relation to processes, machines and procedures.

Temperaments**C**

- the precise attainment of set limits, tolerances or standards.

D

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING

WORK PERFORMED

this chapter includes occupations concerned with performing labouring and other elemental work in processing chemicals, petroleum, rubber, plastic and related materials. Worker functions include: feeding machines and offbearing materials from machines; and handling, moving, carrying and stacking processed materials. Work activities include: starting and stopping conveyors; shovelling or dumping ingredients into mixers, blenders, kettles or feed hoppers; pushing hand trucks or wheelbarrows loaded with scrap material; removing accumulations of carbon, scale, tar and pitch and other residues from equipment; and cleaning machines and work areas.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8178-110	LABOURER GENERAL, CHEMICAL PLANT (chem., n.e.c.)	2	2	8178-166	COMPRESSED-GAS-PLANT WORKER (chem., n.e.c.)	1	2
8178-114	LABOURER GENERAL, PETROLEUM REFINERY (petrol. & coal prod.)	2	2	8178-170	ELECTROLYTIC-CELL CLEANER (chem., n.e.c.; non-ferrous metal)	1	2
8178-118	GUIDER (linoleum prod.)	1	2	8178-174	PAINT POURER, LINOLEUM (linoleum prod.)	1	2
8178-122	STOVE-CARRIAGE MAN (linoleum prod.)	1	2	8178-178	WAX-POT TENDER (iron & steel)	1	2
8178-126	STOVE-BOTTOM MAN (linoleum prod.)	1	2	8178-182	WHARFMAN, COKE PLANT (iron & steel; petrol. & coal prod.)	1	2
8178-130	ELECTRODE CLEANER (chem., n.e.c.; electric. equip.)	1	2	8178-186	CALENDER FEEDER (plastic prod.; rubber)	1	2
8178-134	GASKET COATER (asbestos & min. wool)	1	2	8178-190	COATING-MACHINE FEEDER (any ind.)	1	2
8178-138	RACKMAN (linoleum prod.)	1	2	8178-194	SLASHER HELPER (chem., n.e.c.)	1	2
8178-142	REELER (asphalt roof.)	1	2	8178-198	WAX MOULDER (petrol. & coal prod.)	1	2
8178-146	SIFTING-MACHINE FEEDER (rubber)	1	2	8178-202	LABOURER, PAINT PLANT (paint & varn.)	1	2
8178-150	SLUG-PRESS FEEDER (chem., n.e.c.)	1	2	8178-206	LUTERMAN (petrol. coal prod.)	1	2
8178-154	SPLICER (linoleum prod.)	1	2	8178-210	SCREEN CLEANER (rubber)	1	2
8178-158	SPREADER-OPERATOR HELPER (plastic prod.; rubber)	1	2	8178-214	TAR CHASER (petrol. & coal prod.)	1	2
8178-162	BULLET-LUBRICANT MAN (explosives)	1	2	8178-218	SCRAP-RUBBER GRINDER AND DUMPER (rubber)	1	1

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	Q	K	F	M	E	C							
4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	M-H 347	I 567	2-1	2-1	13	23Y
		4				<u>3</u>		<u>4</u>	5							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple instructions to perform a variety of routine tasks;
- eye-hand co-ordination to use chain hoists to move material or equipment, connect pipes or hoses, or feed materials into or offbear materials from machines;
- manual dexterity to splice cellulose film or rolls of felt paper, repair metal screens or stencil, paint and label containers;

- physical capacity to lift and carry containers of chemicals, fibre, paints or dyes weighing up to one hundred pounds, to push or pull hand trucks or wheelbarrows, and to stoop or bend when cleaning equipment or work areas, and when shovelling materials into containers;
- good vision to read gauges and charts and to examine gas cylinders for cracks, dents and burns or roofing felt for tears, holes and splices;
- adaptability to working when exposed to constant or intermittent noise from calendering machines, mixers, vacuum units and spreader machines, fumes and odours from chemicals or risk of burns from hot asphalt or wax.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight years of general education;
- on-the-job training, ranging from a short demonstration up to three months duration.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs and advancement for workers who demonstrate ability, interest and initiative is to more highly skilled occupations in Minor Group 816/817 CHEMICALS, PETROLEUM, RUBBER, PLASTIC, AND RELATED MATERIALS PROCESSING OCCUPATIONS.

Transfer

It is possible for these workers to transfer to other occupations within the chapter, or to appropriate occupations in labouring and elemental work in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

GROUP 8179

CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned primarily with operating and tending equipment to process chemicals, petroleum, rubber, plastic and related materials.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS													
		Aptitudes										PA	EC	GED	SVP
		G	V	N	S	P	Q	K	F	M	E	C	Ints.	Temps.	
<i>Chemical Processing Operators and Tenders</i>															
8179-110	CHIEF OPERATOR, CONTINUOUS PROCESS (chem., n.e.c.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>3</u>	3	<u>4</u>	4	4	4	L 234567	B 567	4	8
8179-114	CHIEF OPERATOR, BATCHING PROCESS (chem., n.e.c.)	<u>3</u>	<u>3</u>	3	<u>2</u>	<u>3</u>	3	<u>4</u>	4	<u>4</u>	5	L 467	I 567	4	7
8179-118	OPERATOR, CATALYTIC CONVERSION (chem., n.e.c.)	<u>3</u>	<u>3</u>	3	<u>2</u>	<u>3</u>	3	<u>4</u>	4	<u>4</u>	4	L 234567	B 567	4	7
8179-122	OPERATOR, CHEMICAL PROCESS UNIT (chem., n.e.c.)	<u>3</u>	<u>3</u>	3	<u>2</u>	<u>3</u>	3	<u>4</u>	4	<u>4</u>	4	L 234567	B 567	4	7
8179-126	CHEMICAL-PROCESS OPERATOR, BATCHING (chem., n.e.c.)	<u>3</u>	3	4	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	4	M 247	I 567	3	6
8179-130	SULPHONATOR (chem., n.e.c.; soap)	<u>3</u>	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	L 47	I 7	3	6
8179-134	OPERATOR, CHLORINATION PLANT (chem., n.e.c.)	<u>3</u>	4	4	<u>4</u>	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	5	L 47	I 67	3	5
8179-138	PILOT-PLANT TENDER (chem., n.e.c.)	<u>3</u>	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	M 47	I 7	3	5
8179-142	ALUM-LIQUOR-PLANT OPERATOR (chem., n.e.c.)	<u>3</u>	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	L 47	I 7	3	4
<i>Cellulose Film Processing Occupations, n.e.c.</i>															
8179-162	REAGENT MIXER, CELLULOSE FILM (chem., n.e.c.)	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>4</u>	4	M 47	I 457	3	5
8179-166	CELLULOSE-FILM CASTER (chem., n.e.c.)	3	4	4	4	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	L 247	I 47	3	4
8179-170	DRY-END TENDER, CELLULOSE FILM (chem., n.e.c.)	4	4	5	4	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	4	M 457	I 36	2	3
8179-174	WET-END TENDER, CELLULOSE FILM (chem., n.e.c.)	4	4	5	4	4	4	<u>4</u>	4	<u>3</u>	4	M 47	I 467	2	3
8179-178	CELLULOSE-FILM REWINDER (chem., n.e.c.)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	M 47	I	2	2
<i>Explosives Processing Occupations, n.e.c.</i>															
8179-198	WASH-HOUSE AND RECOVERY OPERATOR (explosives)	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	L 47	I 567	3	5
8179-202	GRAINING-PRESS OPERATOR (explosives)	3	4	5	4	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	M 47	I 67	3	4
8179-206	DRY-HOUSE MAN (explosives)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	L 47	I 67	2	3
8179-210	NITROCELLULOSE MAKER (explosives)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	M 47	I 67	2	3
8179-214	BLACK-POWDER-PRESS TENDER (explosives)	4	4	5	4	4	4	<u>4</u>	4	<u>3</u>	5	M 347	I 67	2	2
8179-218	FUSE MAKER (explosives)	4	4	4	4	4	5	<u>4</u>	4	<u>4</u>	5	M 47	I	2	2
<i>Soap and Toiletries Processing Occupations, n.e.c.</i>															
8179-238	PHARMACEUTICAL OPERATOR (pharm. & toil.)	<u>3</u>	4	3	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	M 47	I 57	3	6
8179-242	STERILE-PRODUCTS PROCESSOR (pharm. & toil.)	<u>3</u>	4	4	4	<u>3</u>	3	<u>3</u>	4	<u>3</u>	5	M 4	I 5	3	5
8179-246	PLODDERMAN (soap)	3	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	4	M 47	I 7	3	4

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES	Aptitudes	PA	EC	GED	SVP	Ints.	Temps.
	G V N S P Q K F M E C						

8179-250	GRANULATOR-MACHINE OPERATOR (pharm. & toil.)	3 4 4 4 <u>3</u> 4 <u>3</u> 4 <u>3</u> 5 5	M 4	I	3	3	91	Y0
8179-254	TOILETRIES MOULDER AND COMPRESSOR (pharm. & toil.)	4 4 5 4 <u>3</u> 5 <u>4</u> <u>4</u> <u>4</u> 4 4	L 47	I 6	2	2	319	23Y
8179-260	SCREENER-PERFUMER (soap)	4 4 5 4 <u>4</u> 5 <u>4</u> 4 <u>4</u> 4 5	H 47	I 57	2	2	319	23
8179-264	SOAP CUTTER AND STAMPER (soap)	4 4 5 4 <u>3</u> 4 <u>4</u> 4 <u>4</u> 5 4	H 47	I 57	2	2	319	23
<i>Miscellaneous Chemical Processing Occupations, n.e.c.</i>								
8179-284	DRY-ICE MAKER (chem., n.e.c.)	<u>3</u> 4 4 <u>3</u> <u>3</u> 4 <u>3</u> 4 <u>3</u> 4 5	M 47	I 56	3	6	91	Y0
8179-286	FLAT-BED PRESS OPERATOR (linoleum prod.)	<u>3</u> 4 4 <u>3</u> <u>3</u> 4 <u>4</u> 4 <u>3</u> 5 4	L 47	I 5	3	5	91	Y0
8179-288	LATEX-COAGULATION OPERATOR (chem., n.e.c.)	<u>3</u> 4 4 <u>4</u> <u>3</u> 4 <u>4</u> 4 <u>3</u> 5 4	L 47	I 347	3	5	91	Y0
8179-292	OXIDIZER, LINOLEUM OILS (chem., n.e.c.)	3 4 4 4 <u>3</u> 4 <u>4</u> 4 <u>3</u> 5 3	M 47	I	3	5	91	Y0
8179-296	PHOSPHORIC ACID EXTRACTOR (chem., n.e.c.)	<u>3</u> 4 4 <u>4</u> <u>4</u> 4 <u>4</u> 4 <u>3</u> 5 5	L 47	I 7	3	5	91	Y0
8179-300	BLEACHER, OILS (chem., n.e.c.)	3 4 4 4 <u>4</u> 4 <u>4</u> 4 <u>3</u> 5 4	H 47	I 7	3	4	91	Y0
8179-304	OPERATOR, TITAL LIQUOR PLANT (chem., n.e.c.; paint & varn.)	3 4 4 <u>4</u> <u>3</u> 4 <u>4</u> 4 <u>3</u> 5 4	L 47	I	3	3	91	Y0
8179-308	FURNACE COOLER (non-metal. min. prod., n.e.c.)	4 4 5 4 4 5 <u>3</u> 4 <u>3</u> 5 3	H 47	I 367	2	4	91	Y0
8179-312	FERTILIZER MAKER, PHOSPHATE PROCESS (chem., n.e.c.)	4 4 4 4 <u>4</u> 4 <u>4</u> 4 <u>3</u> 5 5	M 2347	I 567	3	3	913	2Y
8179-316	NUCLEAR-FUEL PROCESSOR (chem., n.e.c.; non-ferrous metal)	3 4 4 <u>4</u> <u>3</u> 4 <u>3</u> 4 <u>3</u> 5 4	H 47	I 3456	3	3	913	Y0
8179-318	PIGMENT PRESSER (chem., n.e.c.)	4 4 4 4 <u>4</u> 4 <u>4</u> 4 <u>3</u> 4 4	H 4	I 37	2	4	319	2Y
8179-320	ACETYLENE-CYLINDER PREPARER (chem., n.e.c.)	4 4 4 4 4 4 <u>3</u> 4 <u>3</u> 4 5	M 4	I 6	2	3	319	2Y
8179-322	DIPPING-MACHINE TENDER (rubber)	4 4 4 4 <u>4</u> 4 <u>4</u> 4 <u>3</u> 4 5	M 456	I 4	2	3	319	23Y
8179-324	PELLETIZER, PLASTICS (chem., n.e.c.)	4 4 5 4 <u>4</u> 5 <u>4</u> 4 <u>3</u> 5 4	M 47	I 5	2	3	319	23Y
8179-328	REFINER-MILL TENDER (rubber)	4 4 5 4 4 5 <u>3</u> 4 <u>3</u> 4 5	M 4	I 5	2	3	319	23Y
8179-332	SPLASH-LINE TENDER (linoleum prod.)	4 4 4 4 4 5 <u>4</u> 4 <u>4</u> 4 5	H 47	I 5	2	3	319	23Y
8179-336	EQUIPMENT CLEANER (paint & varn.)	4 4 4 4 <u>4</u> 5 <u>3</u> 4 <u>3</u> 4 5	H 2347	I 567	2	2	31	23
8179-340	SLAB-OFF MAN (rubber)	4 4 5 4 <u>4</u> 5 <u>3</u> 4 <u>3</u> 4 5	M 4	I 56	2	2	319	23Y
8179-344	BACKING-IN-MACHINE TENDER (linoleum prod.)	4 4 5 4 4 5 <u>4</u> 4 <u>3</u> 4 5	H 47	I	2	2	319	23Y
8179-348	COMPOUND WORKER (plastic prod.)	4 4 4 4 <u>4</u> 4 <u>3</u> 4 <u>3</u> 4 5	M 4	I 7	2	2	319	23Y
8179-352	IMPRINTING-MACHINE TENDER, PLASTICS (plastic prod.)	4 4 5 4 <u>4</u> 5 <u>4</u> 4 <u>3</u> 5 5	M 47	I 6	2	2	319	23Y
8179-356	PARADICHLOROBENZENE MAN (chem., n.e.c.)	4 4 5 4 <u>4</u> 5 <u>4</u> 4 <u>3</u> 4 5	M 47	I 7	2	2	319	23Y
8179-360	SPOOLER, LATEX THREADS (rubber)	4 4 5 4 <u>4</u> 5 <u>4</u> 4 <u>3</u> 5 5	L 47	I 5	2	2	319	23Y
8179-364	VARNISH-MAKER HELPER (paint & varn.)	4 4 4 4 4 4 <u>4</u> 4 <u>3</u> 4 5	H 34	I 56	2	2	31	23
8179-368	FORMULA WEIGHER (plastic prod.; rubber)	4 4 4 4 4 5 <u>4</u> 4 <u>3</u> 4 5	M 347	I 7	2	2	31	23Y

FLOUR AND GRAIN MILLING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with processing grain and oil seeds to produce flour, starches, animal feed, edible oils, cereals and related products. Worker functions include: controlling equipment and operating or tending machines that clean, separate, crush, grind, mill, blend and sift whole or processed grain, make corn starch or extract and refine vegetable oils; feeding or dumping grain into machine hoppers; comparing products to specifications to ensure that quality and other standards are met; handling bags of processed grain or feed; and recording production data. Work activities include: adjusting controls to regulate fineness of milled flour or other products, and flow of materials from storage bins; weighing ingredients for animal feeds; taking samples for analysis; and cleaning equipment and work areas.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8211-110	RICE MILLER (feed & flour mill.)	3	8	8211-214	DRY-STARCH MAKER (food & bev., n.e.c.)	3	5
8211-282	EDIBLE-OIL REFINER (animal & veg. oil)	3	7	8211-290	VEGETABLE-OIL EXTRACTOR, SOLVENT PROCESS (animal & veg. oil)	3	5
8211-114	MILLER (feed & flour mill.)	3	6	8211-126	GRAIN MILLER (distill., brew. & ferment.; feed & flour mill.)	3	4
8211-118	MILLER, CUSTOM-FEED (feed & flour mill.)	3	6	8211-130	CEREAL CLEANER (food & bev., n.e.c.)	3	4
8211-122	FLAKE MILLER (feed & flour mill.; food & bev., n.e.c.)	3	6	8211-218	DEXTRINE MAKER (food & bev., n.e.c.)	3	4
8211-286	VEGETABLE-OIL EXTRACTOR (animal & veg. oil)	3	6				

B

		GED	SVP			GED	SVP
8211-134	FEED MIXER (feed & flour mill.)	3	4	8211-154	DRIER TENDER, GRAIN (distill., brew. & ferment.; feed & flour mill.; food & bev., n.e.c.)	2	3
8211-222	STEEPMAN (food & bev., n.e.c.)	3	4	8211-158	BOLTER (feed & flour mill.)	2	3
8211-226	STARCH-CENTRIFUGE TENDER (food & bev., n.e.c.)	3	4	8211-162	GRAIN CLEANER (feed & flour mill.)	2	3
8211-230	DRY-STARCH-MAKER HELPER (food & bev., n.e.c.)	3	4	8211-166	FEED-PRESS MAN (feed & flour mill.)	2	3
8211-234	WHEAT-STARCH MAKER (food & bev., n.e.c.)	3	3	8211-170	FLOUR MIXER (feed & flour mill.; food & bev., n.e.c.)	2	3
8211-238	GERM-SEPARATOR (food & bev., n.e.c.)	3	3	8211-174	GRAIN MIXER (feed & flour mill.)	2	3
8211-294	WEIGH-TANK TENDER (animal & veg. oil)	3	3	8211-246	NEUTRALIZER (food & bev., n.e.c.)	2	3
8211-138	RICE-MILL WORKER (feed & flour mill.)	2	5	8211-250	STARCH SEPARATOR (food & bev., n.e.c.)	2	3
8211-140	GRAIN-SAMPLE MILLER (feed & flour mill.)	2	4	8211-254	BREAKERMAN (food & bev., n.e.c.)	2	3
8211-142	FLOUR BLENDER (feed & flour mill.)	2	4	8211-258	STARCH WASHER (food & bev., n.e.c.)	2	3
8211-146	MASH DRIER (distill., brew. & ferment.; feed & flour mill.)	2	4	8211-298	CORN-GERM PREPARER (animal & veg. oil)	2	3
8211-242	MILLER, WET PROCESS (food & bev., n.e.c.)	2	4	8211-182	FEED BLENDER (feed & flour mill.)	2	2
8211-150	FEED GRINDER (feed & flour mill.)	2	3	8211-190	PELLET-MILL TENDER (feed & flour mill.)	2	2
				8211-262	GLUTEN-SETTLING MAN (food & bev., n.e.c.)	2	2

C

		GED	SVP			GED	SVP
8211-178	CUSTOM-FEED-MILL HELPER (feed & flour mill.)	2	3	8211-194	GRAIN-CLEANER HELPER (feed & flour mill.)	2	2
8211-186	BOLTER HELPER (feed & flour mill.)	2	2	8211-302	EDIBLE OIL-REFINER HELPER (animal & veg. oil)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>4</u>	4	4	L-M 2347	I 567	3	8-4	91	Y0	
	<u>4</u>	3		<u>4</u>	<u>4</u>				<u>3</u>	5	3							
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	L-M 247	I 4567	3-2	5-2	913	2Y0	
					<u>3</u>	5			<u>4</u>	5	4						2Y3	
C	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M-VH 34	I-B 567	2	3-2	13	23	
		5				4			4									

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply a variety of written and oral technical instructions to set up, operate or tend processing equipment;
- form perception to visually detect deviations from specified standards in consistency, texture or clarity of processed materials;
- eye-hand co-ordination to weigh and measure materials, adjust thermostats and valves for controlling pressures and temperatures, or open and close chutes for regulating flow of ingredients;
- manual dexterity to use hand tools to set up, repair and maintain processing equipment, or to use moisture meters, hydrometers or other measuring instruments in performing quality tests on processed materials;
- adaptability to working in close proximity to pumps, centrifuges, shakers, mixers, grinders and vibrators that generate considerable noise; and exposure to odours and dusts that may cause physical discomfort and respiratory problems;
- physical capacity to perform light to medium work, such as lifting and carrying bags of feed and starch weighing up to fifty pounds; to

ascend and descend stairs to work at different floor levels of large processing equipment; to stoop or kneel when collecting test samples, repairing or cleaning equipment; to extend the arms and hands when turning valves or operating levers; and to use the fingers when feeling ground products to verify fineness.

Additionally,

for Cluster A:

- spatial perception to visualize the characteristics specified for milled grain in order to set up and adjust milling or processing equipment;
- visual acuity, near and far, to read dials, recording charts, thermometers and other instruments from varying distances.

for Cluster B:

- near visual acuity to read gauges and instruments;
- adaptability to working in wet and humid environmental conditions for corn starch processing workers.

for Cluster C:

- physical capacity to perform very heavy work, such as lifting bags of grain and feed weighing in excess of one hundred pounds.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

- A**
- nine or ten years of general education;
 - for 8211-110 RICE MILLER, four to eight years of combined experience in related jobs and on-the-job training;
 - for the remaining occupations, up to three years of combined experience and on-the-job training.

- B**
- eight to ten years of general education;
 - up to one year of combined experience in related jobs and on-the-job training.

- C**
- eight years of general education;
 - up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A and B

Some workers in Cluster B may advance to appropriate occupations in Cluster A. Experienced workers in both clusters who have supervisory potential may advance to 8210-122 FOREMAN, FLOUR-AND-GRAIN-MILLING OCCUPATIONS. See also Chapter 990, FOREMAN OCCUPATIONS, for qualifications profile.

C

Helpers in this cluster who demonstrate ability, interest and initiative may, with experience and some additional training, advance to the appropriate higher skilled occupations in Clusters A and B.

Transfer

A and B

Transfer possibilities for workers in these clusters are limited, but may be to other occupations within the individual cluster; or to appropriate occupations in Chapter 8226, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS; or to other food processing occupations such as 8213-162 FLAKING-ROLL TENDER, or 8227-118 COFFEE GRINDER.

C

Transfer may be to other helper occupations within the cluster, or to appropriate occupations in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the precise attainment of set limits and standards, as required when processing edible food products;
- the evaluation of information against measurable or verifiable criteria, for example, utilizing data from test results to determine if machine adjustments are necessary to maintain product quality.

B

Interests

- non-social work, carried on in relation to processes and machines;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits and standards.

C

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short-cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

BAKING, CONFECTIONERY MAKING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with making bakery products, dried food pastes such as macaroni, cooked cereals and confectionery products. Worker functions include: operating or tending equipment such as mixers, blenders, roasters, ovens, dividers, depositors and cookers; working to precise standards when measuring and preparing ingredients; manipulating cake and candy decorating devices and kneading dough by hand; comparing appearance, taste or texture of bakery or confectionery goods to ensure conformance to standards; and loading and emptying bakery ovens and candy cookers. Work activities include: adjusting thermostats and turning valves to regulate temperatures of ovens and pressures of cookers; placing trays of candy or bakery goods on conveyors or dollies; dividing dough; mixing and depositing batter; cooking and moulding candy; coating chocolates; roasting nuts; decorating cakes or pastries; cleaning equipment or work areas; and recording production data.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8213-114 BAKER 3 6
(bake. prod.; cater. & lodg.; food & bev., n.e.c.)

B

GED SVP

8213-110 CAKE DECORATOR (bake. prod.) 4 6

C

GED SVP

GED SVP

8213-246 CANDY MAKER (confection.) 3 7

8213-258 MOULDING-MACHINE OPERATOR (confection.) 3 5

8213-118 CRACKER-AND-COOKIE-MACHINE OPERATOR (bake. prod.) 3 6

8213-262 PANMAN (confection.) 3 5

8213-126 ROASTER, GRAIN (food & bev., n.e.c.) 3 6

8213-334 GUM-SHEETING AND SCORING-MACHINE OPERATOR (confection.) 3 5

8213-250 CONFECTIONERY COOKER (confection.) 3 6

8213-142 OVENMAN (bake. prod.) 3 4

8213-254 ENROBING-MACHINE OPERATOR (confection.) 3 6

8213-146 GUNNER (food & bev., n.e.c.) 3 4

8213-130 NOODLE PRESSMAN (food & bev., n.e.c.) 3 5

8213-338 CONFECTION-SYRUP MAKER (confection. food & bev., n.e.c.) 3 4

8213-134 ALMOND-PASTE MAKER (confection.) 3 5

8213-342 NUT-MIXTURE MAKER (confection.) 3 3

8213-138 CEREAL-COOKER-AND-EXTRUDER OPERATOR (food & bev., n.e.c.) 3 5

8213-350 CHICLE-CENTRIFUGE OPERATOR (confection.) 3 3

8213-266 SPINNER (confection.) 2 4

D

GED SVP

GED SVP

8213-122 BENCH HAND (bake. prod.) 3 6

8213-194 ICER, HAND (bake. prod.) 2 3

8213-182 INGREDIENTS SCALER AND DISPENSER (bake. prod.; confection.) 3 3

8213-290 DIPPER, HAND (confection.) 2 3

CHAPTER 8213

E

		GED	SVP			GED	SVP
8213-150	COOKER, GRAIN (food & bev., n.e.c.)	3	4	8213-202	COATING OPERATOR, CEREAL (food & bev., n.e.c.)	2	3
8213-154	OVEN TENDER, CEREAL (food & bev., n.e.c.)	3	4	8213-206	CURING-BIN TENDER (food & bev., n.e.c.)	2	3
8213-158	DEPOSITING-MACHINE TENDER (bak. prod.)	3	4	8213-210	DIVIDING-MACHINE TENDER (bake. prod.)	2	3
8213-162	FLAKING-ROLL TENDER (food & bev., n.e.c.)	3	4	8213-214	SLICING-MACHINE TENDER (bake. prod.)	2	3
8213-166	BATTER AND DOUGH MIXER (bake. prod.)	3	4	8213-294	SANDING-MACHINE TENDER (confection.)	2	3
8213-170	DOUGH-KNEADING-MACHINE TENDER (bake. prod.)	3	4	8213-298	CANDY-CENTER MAKER (confection.)	2	3
8213-174	DOUGHNUT-MACHINE TENDER (bake. prod.)	3	4	8213-302	SUCKER-MACHINE TENDER (confection.)	2	3
8213-178	PRETZEL BAKER (bake. prod.)	3	4	8213-354	COOK, CORN CHIPS (food & bev., n.e.c.)	2	3
8213-270	CANDY-MAKING-MACHINE TENDER (confection.)	3	4	8213-358	CORN COOKER (food & bev., n.e.c.)	2	3
8213-274	CHOCOLATE-MOULDER, MACHINE (confection.)	3	4	8213-362	CORN-DOUGH-MACHINE TENDER (bake. prod.; food & bev., n.e.c.)	2	3
8213-186	ICING MIXER (bake. prod.)	3	3	8213-366	POPCORN-CANDY MAKER (confection.)	2	3
8213-346	NUT ROASTER (confection.)	3	3	8213-222	BATTER-DEPOSITOR TENDER (bake. prod.)	2	2
8213-278	CUTTING-MACHINE TENDER (confection.)	2	5	8213-226	NOODLE-PASTE-MIXER TENDER (bake. prod.)	2	2
8213-190	CONE-AND-WAFER-MACHINE TENDER (bake. prod.)	2	4	8213-306	COCOA-POWDER MIXER (confection.)	2	2
8213-282	CANDY PULLER AND ROLLER (confection.)	2	4	8213-310	CONCHE-MACHINE TENDER (confection.)	2	2
8213-286	CHOCOLATE TEMPERER (confection.)	2	4	8213-370	BATCH-MIXER, CHEWING GUM (confection.)	2	2
8213-198	PIE MAKER, MACHINE (bake. prod.)	2	3	8213-374	CHEWING-GUM-MACHINE TENDER (confection.)	2	2
				8213-378	POPCORN MAKER (confection.)	2	2

F

		GED	SVP			GED	SVP
8213-218	BAKER HELPER (bake. prod.; cater. & lodg.)	2	3	8213-382	CHICLE-GRINDER FEEDER (confection.)	2	2
8213-314	CANDY-MIXER HELPER (confection.)	2	2	8213-386	GUM-SUPPLY MAN (confection.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	3	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M 34	I 36	3	6	910	90Y1	
B	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>3</u>	L 47	I	4	6	081	X09	
C	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-M 47	I 56	3-2	7-3	91	0Y	
	4	3		<u>4</u>	<u>4</u>			<u>4</u>			5							
D	3	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-H 47	I	3-2	4-3	13	0Y29	
	4		5	3	<u>4</u>	5	4	4			5						2Y	
E	4	4	4	4	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L-H 47	I 356	3-2	5-2	931	2Y9	
	3				<u>4</u>	5		<u>3</u>	<u>4</u>		4							
											<u>3</u>							
F	4	4	4	<u>4</u>	4	5	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	M-H 347	I 356	2	3-2	13	23	
						4	<u>4</u>	<u>4</u>		4	5		I 567			139		

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply the techniques of decorating cakes and pastries, baking or confectionery making, or operating or tending bakery and confectionery equipment;
- form perception to make visual inspections during processing in order to determine quality of products and to observe equipment to ensure correct functioning;
- eye-hand-finger co-ordination to manually decorate cakes or pastries, weigh and mix ingredients, or adjust valves to regulate temperatures or pressure of food processing equipment;
- finger dexterity to feel products to verify texture, consistency and moisture content, to knead dough and candy, and to manipulate cake and pastry decorating bags;
- manual dexterity to mix ingredients by hand; measure or weigh ingredients; knead and roll dough; use hand tools to install dies, nozzles or mould boards in equipment; or to manipulate utensils such as nozzles, scoop, brushes or spatulas;
- physical capacity, depending on the occupation, to perform light to heavy work and to stoop or bend the body or reach the arms when placing items in or removing them from ovens, or shovelling materials into barrels;
- visual acuity to read thermometers, scales, measuring cups and timers or to examine products to ensure that consistency, colour and shape conform to specifications.

Additionally,

for Bakers:

- numerical ability to perform accurate calculations when measuring and weighing ingredients or when computing production requirements;
- clerical perception to detect and avoid errors when measuring or weighing ingredients according to recipe requirements;

- adaptability to working in close proximity to hot ovens which generate considerable heat and create the risk of being burned.

for Cake Decorators:

- spatial perception to visualize and prepare three dimensional decorating forms and arrangements from photographs or diagrams;
- colour discrimination to distinguish icing or pastry cream colours used to decorate cakes.

for workers in Cluster C:

- spatial perception to visualize the adjustments to equipment and modifications of procedures required to obtain the desired product, either prior to or during the cooking or forming operations;
- adaptability to unpleasant environmental conditions, such as working close to machines that create considerable noise, and to hazardous conditions, such as handling hot objects and working around operating machinery.

for workers in Cluster E:

- colour discrimination when examining cereals, candy mixtures and bakery products being mixed or cooked, where colour is an essential characteristic in determining required standard;
- capacity to work in proximity to machines that create constant or intermittent noise, and in proximity to kettles, cookers and tanks that generate considerable heat and present the risk of being burned.

for workers in Cluster F:

- spatial perception when operating fork-lift trucks, to observe changing positions of fork in relation to objects or materials, and to judge distances in order to manoeuvre fork under objects;
- eye-hand-foot co-ordination to operate levers, pedals and steering wheel of fork-lift truck;
- capacity to endure noise and heat from processing equipment and to work in dusty atmospheric conditions;
- adaptability to working when exposed to physical hazards such as burns from hot kettles, cookers or tanks, or body injuries from moving conveyors.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- A**
- ten to eleven years of general education;
- a two to three-year apprenticeship or similar on-the-job training, sometimes supplemented by courses at a community college;

- completion of examination, dependent upon local requirements.

B

- ten to eleven years of general education;
- up to two years of on-the-job training.

C, D, E AND F

- eight to ten years of general education;

- one month to two years of on-the-job training, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A and B

Since Bakers and Cake Decorators may be employed in a variety of commercial bakeries and institutional and industrial establishments, advancement may depend upon their place of employment. Those employed in large establishments who have supervisory potential may advance to 8210-110 FOREMAN, BAKING, CONFECTIONERY-MAKING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Some who acquire knowledge of business practices may become self-employed.

C, D, E and F

Workers in these clusters may advance to other occupations requiring higher skills within these clusters. Those with supervisory potential may advance to 8210-110 FOREMAN, BAKING, CONFECTIONERY-MAKING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. With some additional training, some may also advance to 8213-114 BAKER.

Transfer

Transfer possibilities for Bakers and Candy Makers are limited. Cake Decorators may transfer to 8223-162 ICE-CREAM DECORATOR. Other workers in this chapter may transfer to occupations requiring similar skills, mostly within their own cluster. Some workers who mix ingredients, or cook or bake foods in production quantities may transfer to occupations requiring similar basic skills in Minor Group 816/817, CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- activities leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against sensory or judgmental criteria as when visually determining acceptability of baked products;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B

Interests

- activities leading to satisfaction from tangible results;
- abstract or creative work;
- dealing with things or objects.

Temperaments

- the interpretation of feelings, ideas or facts in terms of personal viewpoint, for example when decorating cakes or pastries;
- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria.

C

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example using test results to verify product quality;
- the precise attainment of set limits or standards.

D**Interests**

- dealing with things or objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations, carried out according to set procedures or sequences;
- the precise attainment of set limits or standards.

E**Interests**

- work which is non-social in nature and in which machines, techniques and processes are paramount;
- routine, concrete and organized activities;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations;
- the precise attainment of set limits or tolerances to ensure that a high standard of quality is maintained for products scheduled for human consumption;
- the evaluation of information against sensory or judgmental criteria, such as determining product acceptability by visual comparison.

F**Interests**

- dealing with things and objects;
- routine, concrete and organized activities.

Temperaments

- repetitive or short cycle activities carried out under specific instruction, allowing little or no room for independent judgment in working out job problems.

SLAUGHTERING AND MEAT CUTTING, CANNING, CURING AND PACKING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with slaughtering animals and poultry, preparing, preserving and packing meats, and processing edible and inedible by-products. Worker functions include: manipulating knives, cleavers, saws and special tools or devices to stun, slaughter and skin animals; working precisely to cut and saw carcasses and reduce wholesale-size cuts to retail steaks, roasts or chops; tending meat processing equipment such as grinders, mixers, cookers and sausage makers; and handling offal and hides, hanging carcasses and poultry on conveyor hooks, and moving cut meat between processing areas. Work activities include: dehairing hogs; defeathering chickens; cooling and storing meat; removing bones and trimming meat cuts; smoking and curing meat; weighing meats; regulating operation of processing equipment; tagging and identifying carcasses; and cleaning equipment and work areas.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8215-198	BUTCHER (cater. & lodg.)	3	7	8215-110	BUTCHER, ALL-ROUND (slaught. & meat pack.)	3	6

B

		GED	SVP			GED	SVP
8215-114	MEAT CUTTER (ret. trade;slaught. & meat pack.)	3	5	8215-134	CARCASS SPLITTER (slaught. & meat pack.)	2	4
8215-118	SLAUGHTERER, RITUAL (slaught. & meat pack.)	3	5	8215-142	STICKER, ANIMAL (slaught. & meat pack.)	2	4
8215-202	SMOKER, MEAT (slaught. & meat pack.)	3	5	8215-214	POULTRY-SPECIALTY BUTCHER (slaught. & meat pack.)	2	4
8215-122	SKINNER, ANIMAL (slaught. & meat pack.)	2	6	8215-150	HEAD TRIMMER (slaught. & meat pack.)	2	3
8215-130	EVISцерATOR, ANIMAL (slaught. & meat pack.)	3	4	8215-154	TRIMMER, MEAT (slaught. & meat pack.)	2	3
8215-206	PRE-COOKED-SAUSAGE MAKER (slaught. & meat pack.)	3	4	8215-158	VISCERA MAN (slaught. & meat pack.)	2	3
8215-138	ENZYME INJECTOR (slaught. & meat pack.)	3	3	8215-230	VACUUM WRAPPER, MEAT (slaught. & meat pack.)	2	3
8215-126	BONER, MEAT (slaught. & meat pack.)	2	5	8215-160	STUNNER AND SHACKLER (slaught. & meat pack.)	2	2
8215-210	SEWED-CASING MAKER (slaught. & meat pack.)	2	5	8215-306	MEAT-MOULD SEALER (slaught. & meat pack.)	2	2

C

		GED	SVP			GED	SVP
8215-218	MEAT CHOPPER (slaught. & meat pack.)	2	4	8215-242	MEAT STUFFER (slaught. & meat pack.)	2	3
8215-222	PICKLING-SOLUTION INJECTOR (slaught. & meat pack.)	2	4	8215-246	SAUSAGE MIXER (slaught. & meat pack.)	2	3
8215-234	CHUB-SAUSAGE-MACHINE TENDER (slaught. & meat pack.)	2	3	8215-250	SAUSAGE-PEELING-MACHINE TENDER (slaught. & meat pack.)	2	3
8215-238	COOK, MEATS (slaught. & meat pack.)	2	3	8215-330	COOKER MAN, OFFAL (animal & veg. oil;slaught. & meat pack.)	2	3

		GED	SVP			GED	SVP
8215-334	COOK, PET-FOOD (slaught. & meat pack.)	2	3	8215-274	CASING-RUNNING-MACHINE TENDER (slaught. & meat pack.)	2	2
8215-338	LARD RENDERER (animal & veg. oil;slaught. & meat pack.)	2	3	8215-278	LINKING-MACHINE TENDER (slaught. & meat pack.)	2	2
8215-342	RENDER MAN (animal & veg. oil;slaught. & meat pack.)	2	3	8215-282	MEAT GRINDER (slaught. & meat pack.)	2	2
8215-343	TALLOW-EXTRACTOR TENDER (animal & veg. oil)	2	3	8215-286	MEAT-PRESS TENDER (slaught. & meat pack.)	2	2
8215-344	TALLOW REFINER (animal & veg. oil)	2	3	8215-290	MEAT-ROLLING-MACHINE TENDER (slaught. & meat pack.)	2	2
8215-346	TRIPE COOK (slaught. & meat pack.)	2	3	8215-350	BLEACHER, LARD (animal & veg. oil;slaught. & meat pack.)	2	2
8215-162	DEFEATHERER (slaught. & meat pack.)	2	2	8215-354	BONE CRUSHER (slaught. & meat pack.)	2	2
8215-166	DEHAIRING-MACHINE TENDER (slaught. & meat pack.)	2	2	8215-358	CENTRIFUGE TENDER (slaught. & meat pack.)	2	2
8215-170	SINGEING-MACHINE TENDER (slaught. & meat pack.)	2	2	8215-362	HOOF REMOVER (slaught. & meat pack.)	2	2

D

		GED	SVP			GED	SVP
8215-226	SAUSAGE DRIER AND SMOKER (slaught. & meat pack.)	2	4	8215-174	SHAVER, HOGS (slaught. & meat pack.)	2	2
8215-146	COOLER MAN (slaught. & meat pack.)	2	3	8215-178	SHROUDER (slaught. & meat pack.)	2	2
8215-254	DRY-CURE MAN (slaught. & meat pack.)	2	3	8215-270	PACKAGER, POULTRY (slaught. & meat pack.)	2	2
8215-258	MEAT-ROLL TIER (slaught. & meat pack.)	2	3	8215-294	BUTCHER HELPER (ret. trade)	2	2
8215-262	PICKLE MAKER (slaught. & meat pack.)	2	3	8215-298	SAUSAGE TIER (slaught. & meat pack.)	2	2
8215-266	PICKLER, MEAT (slaught. & meat pack.)	2	3	8215-302	SEASONING MIXER (slaught. & meat pack.)	2	2
				8215-310	MEAT-MOULD STRIPPER (slaught. & meat pack.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	3	4	<u>3</u>	<u>4</u>	4	<u>3</u>	3	<u>3</u>	4	4		H 347	I 2467	3	7-6	91	0Y
		4	5	<u>4</u>		5		4		5	5							
B	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	5	5		L-H 347	I 23467	3-2	6-2	913	2Y
	3		4			4			<u>4</u>	4	4							2Y3
C	4	4	4	4	4	5	<u>4</u>	4	<u>4</u>	5	5		L-H 234	I 23467	2	4-2	319	2Y3
			5			4				4								
D	4	4	4	4	4	4	<u>4</u>	4	<u>4</u>	5	5		M-H 347	I 46	2	4-2	13	23Y
			5			5				4	4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

A and B

- learning ability to understand and apply the techniques of slaughtering and skinning animals and preparing meats for the wholesale or retail trade;
- spatial perception to visualize animal anatomy in order to cut and prepare carcasses without wasting salable meat;

- eye-hand-finger co-ordination and manual dexterity to use mechanical devices, knives and other butcher's tools to stun, slaughter and skin animals;
- physical capacity to perform light to heavy work such as lifting quarters of beef or pushing carcasses along suspended rail; to reach for and handle knives, cleavers and saws; and to stoop or bend while skinning animals or lifting meats;

- near visual acuity to skin carcasses without cutting or scoring hides, or to cut, slice and fillet meats;
- adaptability to walking in and out of refrigerated rooms, working in wet and humid areas permeated with meat odours and working with sharp tools that may cause hand or finger injuries;

Additionally, for Cluster A:

- form perception to make visual comparisons of meat portions to ensure conformance to quality and size requirements.

Additionally, for Cluster B:

- a possible requirement to work close to equipment that generates considerable heat or noise.

C

- learning ability to learn and apply the procedures for tending meat processing equipment;
- eye-hand-co-ordination to observe gauges and simultaneously turn valves of cookers or other processing equipment;
- manual dexterity to pack meat products into containers or to use scales to weigh meats and meat products;
- physical capacity to perform light to heavy work, such as lifting and carrying hams, bags of milk powder or pails of meat; climbing stairs

- and balancing on platforms during meat processing operations; and stooping or bending to lift and dump ingredients into machines;
- capacity to work in wet and humid areas, close to kettles and cookers that generate considerable heat, and close to grinders and machines that create considerable noise;
- adaptability to working where meat processing odours and physical hazards such as slippery floors and sharp utensils are present.

D

- learning ability to understand simple instructions and apply them to perform a variety of uncomplicated tasks;
- eye-hand-finger co-ordination and manual dexterity to roll and tie boneless cuts of meats, wrap and package poultry, or to use knives to shave, scrape or trim carcasses;
- physical capacity to perform medium to heavy work, such as moving carcasses along suspended rail or lifting and carrying sides of beef; to reach for and handle items such as cuts of meat, and utensils or metal moulds; and to stoop or bend when working on lower extremities of suspended carcasses;
- near visual acuity to read graduations on weigh scales or thermometers;
- adaptability to working in wet and humid areas and exposure to physical hazards such as cuts and scratches from sharp utensils.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- a two to three-year apprenticeship or similar form of on-the-job training.

B

- eight to ten years of general education;
- from one month to two years of on-the-job training, depending on the complexity of the occupation.

C and D

- up to eight years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Experienced workers in this cluster may advance to head of a meat department in a large chain store, manager of a smaller specialized meat market, or in a large meat-packing establishment to 8210-142 FOREMAN, SLAUGHTERING-AND-MEAT-PACKING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Those who acquire knowledge of business practices may become owners of their own shops.

B and C

Experienced workers in these clusters may advance to higher skilled occupations in either cluster, or to occupations in Cluster A. Those with supervisory potential may advance to 8210-142 FOREMAN, SLAUGHTERING-AND-MEAT-PACKING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualification profile.

D

Advancement is normally to higher skilled occupations in this chapter for workers who demonstrate ability, interest and initiative.

Transfer

Because of the specialized nature of the occupations in this chapter, transfer would normally be to other occupations within the chapter that require similar basic skills.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- work which is essentially non-social in nature and carried on in relation to processes, machines and techniques;
- working with things and objects, such as cleavers, knives and saws.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example, slicing and trimming meats in a restaurant for individual servings according to established portion-control procedures;
- the precise attainment of set limits, tolerances or standards.

B

Interests

- non-social work carried on in relation to processes, techniques and machines;
- working with things and objects, such as weigh scales, hand tools and utensils;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences, such as skinning animals or slaughtering cattle;
- the precise attainment of set limits, tolerances or standards as required when preparing meat for human consumption.

Additionally, for some of the less complex occupations in this cluster:

- doing things only under specific instruction, allowing little or no room for independent action or judgement in working out job problems.

C and D

Interests

- working with things and objects such as table scales, presses or conveyors;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences, for example, tending meat processing equipment;
- the precise attainment of set limits, tolerances or standards;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

OTHER REQUIREMENTS

Workers in occupations 8215-114 MEAT CUTTER and 8215-198 BUTCHER are in contact with the public to a much greater extent than workers in other occupations in this cluster, consequently they should have a bright, pleasant personality, a sound business sense, meticulous habits and a wholesome, clean appearance. Concern over sanitation is very high in food handling or processing establishments and both personal and equipment cleanliness are considered essential for all occupations in this cluster.

FISH CANNING, CURING AND PACKING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with preparing, preserving and packing fish and shellfish for use as food, and fish by-products such as oil and fish-meal. Worker functions include: setting up and operating equipment or tending machines that skin, fillet, cut, cook and cool fish, clean and shuck shellfish, cure fish by smoking, or extract fish oil and process fish by-products; manipulating knives and special tools to clean and cut fresh fish and extract meat from shellfish by hand; and comparing fish and fish by-products to specified standards. Work activities include: wrapping and packing fish, shellfish and fish cakes; adjusting controls to regulate flow of water, steam or smoke to processing equipment; and cleaning equipment and work areas.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8217-110	FISH-CUTTING-MACHINE SETTER (fish process.)	2	5	8217-112	FISH-BY-PRODUCTS PROCESSOR (fish process.)	2	4

B

		GED	SVP			GED	SVP
8217-114	FISH SMOKER (fish process.)	2	4	8217-134	SHELLFISH PROCESSOR, HAND (fish process.)	2	2
8217-118	FISH-PRODUCTS MAKER (fish process.)	2	3	8217-136	BASKET-FILTER TENDER (fish process.)	2	2
8217-122	CENTRIFUGE TENDER (fish process.)	2	3	8217-138	DRIER-AND-GRINDER TENDER (fish process.)	2	2
8217-126	SHELLFISH-PROCESSING- MACHINE TENDER (fish process.)	2	3	8217-142	FISH-CAKE MAKER (fish process.)	2	2
				8217-146	SHELLFISH-SEPARATOR (fish process.)	2	2
8217-130	FISH CLEANER AND CUTTER (fish process.)	2	2	8217-150	FISH-EGG PROCESSOR (fish process.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	4	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	<u>3</u>	<u>3</u>	5	4	M 34	1 4567	2	5-4	91	Y0	
					<u>4</u>			4			5	M 24					Y02	
B	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L-H 34	1 4567	2	4-2	139	23Y	
			5							4	4							
											<u>3</u>							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply the techniques of processing seafood by hand or machine;
- form perception to make visual comparisons of fish and fish by-products to ensure appearance, size and texture conform to prescribed standards;
- eye-hand co-ordination to clean and fillet fish or to remove edible meat from shellfish;

- manual dexterity to use hand tools to set up and maintain equipment or to wrap and pack fish or fish by-products;
- sufficient strength to perform light to heavy work, requiring the lifting of machinery parts, boxes of fish or bags of fish meal;
- physical capacity to stoop or bend when maintaining equipment, packing containers, or loading machinery;
- adaptability to work in areas that are wet, humid, noisy and

odorous, and capacity to use filleting knives that present a risk of finger or hand injury.

Additionally, for Cluster A:

- spatial perception required for 8217-110 FISH-CUTTING-MACHINE SETTER in order to visualize arrangement and functioning of machine parts, represented by diagrams in maintenance and repair manuals;

- finger dexterity to perform maintenance work on machines;
- agility for 8217-112 FISH-BY-PRODUCTS PROCESSOR to climb on and around processing equipment.

Additionally, for Cluster B:

- colour discrimination for occupation 8217-114 FISH SMOKER to determine quality of cured fish and for 8217-150 FISH-EGG PROCESSOR to sort fish eggs.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- one year of on-the-job training and up to two years related experience;

- for 8217-112 FISH-BY-PRODUCTS PROCESSOR, six months combined on-the-job training and experience.

B

- up to eight years of general education;
- two weeks to six months of on-the-job training and experience, depending on the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Experienced workers in this cluster with supervisory and technical ability may advance to 8210-118 FOREMAN, FISH-CANNING, CURING-AND-PACKING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

B

With experience and some additional training, workers in this cluster may advance to higher skilled occupations within this cluster or in Cluster A.

Transfer

A

Transfer may be possible to appropriate occupations in other chapters requiring similar skills.

B

Transfers are normally to other occupations requiring similar skills within this cluster, but may also be possible to occupations in other chapters involving similar equipment, such as driers, centrifuges or grinders.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things or objects, such as cutting knives or hand tools.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards, such as setting up machines that fillet and skin fish;
- the evaluation of information against measurable or verifiable criteria, such as using test results to determine if machinery adjustments are required.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards as required in the preparation of fish and fish products intended for human consumption.

FRUIT AND VEGETABLE CANNING, PRESERVING AND PACKING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with canning, preserving and packing fruit and vegetables. The primary worker function is tending equipment to wash, peel, mix, blend, cook, cool, dehydrate, freeze or pickle fruit and vegetables. Work activities include: weighing and measuring ingredients; dumping fruit and vegetables into vats or tanks, adding preservatives and removing processed foods; starting and stopping conveyors to carry produce from one processing area to another; setting timers and machine controls; and washing and cleaning equipment and work areas.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8221-110	CANDIED-FRUIT PROCESSOR (can. & preserv., n.e.c.)	3	4	8221-134	VEGETABLE-DRIER TENDER (can. & preserv., n.e.c.)	2	3
8221-114	MINCEMEAT MAKER (can. & preserv., n.e.c.)	2	3	8221-138	FOOD-COOLING-PAN TENDER (can. & preserv., n.e.c.)	2	2
8221-118	FREEZE-DRY-FOOD PROCESSOR (can. & preserv., n.e.c.)	2	3	8221-142	BRINE-TANK-SEPARATOR TENDER (can. & preserv., n.e.c.)	2	2
8221-122	VEGETABLE PICKLER (can. & preserv., n.e.c.)	2	3	8221-144	DUMPING-MACHINE TENDER (can. & preserv. n.e.c.)	2	2
8221-126	BLANCHING-MACHINE TENDER (can. & preserv., n.e.c.)	2	3	8221-146	POTATO-PEELING-MACHINE TENDER (food & bev., n.e.c.)	2	2
8221-130	LYE-PEEL TENDER (can. & preserv., n.e.c.)	2	3	8221-150	BULK FILLER (can. & preserv., n.e.c.)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-M	47	I 46	3-2	4-2	319	23Y
			5		5	<u>3</u>	3	<u>4</u>	4	4							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow written and oral instructions and apply the procedures for tending equipment to process fruits and vegetables;
- form perception to make visual comparisons of fruit and vegetables being prepared or preserved to detect deviations from specified standards;
- eye-hand co-ordination to remove sub-standard products or foreign materials from moving conveyors, or to turn valves and push levers on equipment;
- manual dexterity when using scales or other devices to weigh and measure ingredients, or using portable mixer or wooden paddle to stir or blend solutions;

- physical capacity to lift and carry bags of sugar and salt, boxes of fruit and tubs of vegetables weighing up to fifty pounds;
- capacity to reach for and handle various objects and materials, and to feel and finger products to verify acceptability;
- good vision to examine food passing on conveyors and detect processing irregularities;
- colour vision for occupations where colour is an essential characteristic in determining product quality;
- capacity to adapt to working in wet and humid environmental conditions in areas where steam and water are used extensively, and adaptability to hazards such as moving equipment or using sharp knives to cut fruit or vegetables.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;
- one to four months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter with supervisory potential may advance to 8210-126 FOREMAN, FRUIT-AND-VEGETABLE-CANNING, PRESERVING-AND-PACKING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Most workers in this chapter are concerned with tending specialized food-processing equipment and skills acquired are not readily transferable, however, with limited additional training, transfer may be to some occupations in Group 8229, FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and well organized work;
- dealing with things or objects;
- non-social work carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits and standards.

MILK PROCESSING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with processing raw milk and cream to make dairy products such as pasteurized milk, cream, butter, cheese and ice-cream. Worker functions include: operating or tending milk processing and dairy equipment such as pasteurizers, homogenizers, separators, churns, mixers, coolers and freezers; manipulating hand tools and connecting pipes to prepare equipment for use; dumping ingredients into and removing products from processing equipment; computing amounts of ingredients for batches of dairy products; comparing samples of processed dairy foods with specified standards; and handling items such as milk cans, butter, cheeses and ice-cream cartons. Work activities include: adjusting valves, pumps and temperature controls to regulate processes; weighing and measuring ingredients; conducting tests such as determining butter fat content of milk; recording production or test data; and cleaning equipment or work areas.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8223-194 **PROCESS-CHEESE FORMULATOR** 4 6
(dairy)

B

GED SVP

8223-110 **MILK-PROCESSING-EQUIPMENT** 3 6
 OPERATOR (dairy)
8223-114 **SPECIALTY-PRODUCTS MAKER** 3 6
 (dairy)
8223-118 **BUTTER MAKER** (dairy) 3 6

GED SVP

8223-158 **ICE-CREAM MAKER** (dairy) 3 5
8223-198 **CHEESE MAKER** (dairy) 3 5
8223-122 **DRIER OPERATOR** (dairy) 3 4
8223-202 **COTTAGE-CHEESE MAKER** (dairy) 3 4

C

GED SVP

8223-162 **ICE-CREAM DECORATOR** (dairy) 3 5

D

GED SVP

8223-166 **FROZEN-STICK-NOVELTY MAKER** 3 4
 (dairy)
8223-206 **CHEESE-MAKER HELPER** (dairy) 3 4
8223-210 **COOKER, PROCESS CHEESE** 3 4
 (dairy)
8223-170 **ICE-CREAM-NOVELTY MAKER** 2 4
 (dairy)
8223-214 **SLICED-CHEESE MAKER** (dairy) 2 4

GED SVP

8223-126 **MILK AND CREAM RECEIVER** 2 3
 (dairy)
8223-130 **CANNED-MILK STERILIZER** 2 3
 (dairy)
8223-218 **CHEESE CUTTER** (dairy) 2 3
8223-222 **GRATED-CHEESE MAKER** (dairy) 2 3
8223-134 **MILK-POWDER GRINDER** (dairy) 2 2

E

GED SVP

8223-138 **DAIRY HELPER** (dairy) 2 2
8223-174 **ICE-CREAM WORKER** (dairy) 2 2

GED SVP

8223-226 **CHEESE-FACTORY WORKER** 2 2
 (dairy)

QUALIFICATIONS PROFILE

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	<u>3</u>	4	<u>3</u>	<u>3</u>	4	4	4	5	<u>3</u>	L 47	I 7	4	6	71	90Y
B	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-H 347	I 3456	3	6-4	91	0Y9
			3	<u>4</u>	<u>4</u>		<u>4</u>	4		4	5						
C	3	3	4	<u>3</u>	<u>3</u>	5	<u>3</u>	<u>2</u>	<u>3</u>	5	<u>3</u>	L 47	I 4	3	5	190	Y01
D	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	4	L-M 47	I 4567	3-2	4-2	913	2Y3
			5		<u>3</u>				<u>4</u>	5	5						2Y0
E	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	4	M-H 234	I 2456	2	2	319	23Y
			5			5					5						

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to acquire and apply the techniques of blending and making processed cheese products;
- numerical ability to accurately calculate quantities of each type of cheese required to make blended batch according to formula;
- form perception to detect desired quality when selecting cheeses for a specified blend;
- clerical perception to avoid errors when recording quantities, grades and types of cheese on charts or work orders;
- colour discrimination to ensure colour shades of selected cheeses meet required standards;
- capacity to handle cheese, and to use sense of smell, feel and taste to arrive at desired blend;
- adaptability to working in areas permeated with a strong odour of sour milk.

B

- learning ability to understand and apply the procedures for operating dairy products processing equipment;
- spatial perception to visualize processing operations and to adjust controls to process products most efficiently;
- form perception to make visual comparisons of processed products to ensure firmness, texture, consistency or purity conform to standards;
- eye-hand-finger co-ordination to read gauges and instruments and simultaneously adjust controls, connect pipes or fittings, or weigh and measure a variety of ingredients or products;
- manual and finger dexterity to perform quality tests on product samples, or to use hand tools to prepare and assemble processing equipment;
- physical capacity to perform light to heavy work such as lifting milk cans, sacks of sugar or cartons of butter, and to stoop to inspect equipment or stack containers on pallets;
- capacity to work in wet and damp work areas, in proximity to pasteurizers and dryers that generate considerable heat, and vacuum units and mixers that create considerable noise;
- capacity to work while exposed to physical hazards, such as working around moving parts on machinery, or handling strong cleaning or sterilizing solutions.

C

- learning ability to acquire the techniques and use imagination and artistic skill to decorate confections in a tasteful and appropriate manner;
- spatial perception to create designs or artistic figures on products;
- form perception to visually detect imperfections in moulded shapes or forms of ice-cream specialties;
- eye-hand co-ordination to press and move icing bag over confection to create specified designs or artistic figures;
- manual and finger dexterity to pack ingredients into or remove products from metal moulds and to stencil wording on confection;
- colour discrimination to prepare decorative creams of specified colours.

D

- learning ability to understand the procedure for tending dairy equipment and to follow uncomplicated written or oral instructions;
- form perception to make visual comparisons of dairy products to ensure texture, body, consistency and viscosity conform to specifications;
- eye-hand co-ordination when clearing blockages or stoppages from processing machines, when positioning mould pans under filling spouts or when using scales to weigh ingredients or products;
- manual dexterity to use hand tools to prepare machines or equipment, to use knives to trim mould or sediment from cheese, or to use testing apparatus to test product samples;
- adaptability to work in locations which are subject to noise, moisture and odours.

E

- learning ability to understand simple instructions and apply them when performing a variety of uncomplicated tasks;
- form perception to make visual comparisons when cutting cheese blocks into equal portions or cutting butter or cottage cheese into squares;
- eye-hand co-ordination to feed carton-forming machine, weigh ingredients or products or to position empty containers under hopper or filler head;
- manual dexterity to use hand tools, cut cheese or butter with knives or wrap cheese in foil;
- physical capacity to perform medium to heavy work;
- capacity to work in refrigerated areas is a requirement for some occupations.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- eleven to twelve years of general education;
- two years of on-the-job training.

B

- ten years of general education;
- six months to two years of combined experience in related occupations and on-the-job training.

C

- ten years of general education;

- six months to one year of combined experience in related occupations and on-the-job training.

D

- eight to ten years of general education;
- one to six months of on-the-job training.

E

- eight years of general education;
- on-the-job training ranging from a short demonstration up to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

With additional training, Process-Cheese Formulators may advance to 2135-166 FOOD TECHNOLOGIST. Those with supervisory potential may advance to 8210-138 FOREMAN, MILK PROCESSING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

B

Workers in this cluster may advance to more highly skilled occupations within this cluster. Those involved in cheese processing may, with some additional training, advance to 8223-194 PROCESS-CHEESE FORMULATOR. Experienced workers with supervisory potential may advance to 8210-138 FOREMAN, MILK PROCESSING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

C and D

Ice-Cream Decorators and experienced workers in Cluster D may advance to more skilled occupations in Cluster B. Those with supervisory potential may advance to 8210-138 FOREMAN, MILK PROCESSING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

E

These occupations are considered entry jobs and advancement is normally to more highly skilled occupations for workers who demonstrate ability, interest and initiative.

Transfer

Because of specialized nature of the work performed, transfer possibilities for workers in this chapter are normally limited to other occupations requiring similar skills within the chapter. However, experienced Ice-Cream Decorators may, with limited additional training, transfer to 8213-110 CAKE DECORATOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- scientific and technical work, for example formulating quantities, grades and types of cheese required for blending and making processed-cheese products;
- dealing with things and objects.

Temperaments

- the evaluation of information against sensory or judgmental criteria, for example selecting cheeses for a specified blend by feeling, testing, smelling and examining various types;
- the evaluation of information against measurable or verifiable criteria, such as using laboratory reports to determine if amendments are required on charts or batch work orders;
- the precise attainment of set tolerances or standards as required when processing food for human consumption.

B

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- working with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example using test apparatus to verify quality of product;
- the precise attainment of set tolerances or standards as is necessary when processing food products;
- the evaluation of information against sensory or judgmental criteria, for example tasting, smelling, examining or feeling product to determine its quality.

C

Interests

- working with things and objects;
- non-social work, carried on in relation to processes and techniques;
- work resulting in tangible productive satisfaction, for example producing moulded and decorated ice-cream specialties.

Temperaments

- the precise attainment of set tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, for example, using work order to determine correct position of decorations, candies or nuts on confections;
- a variety of duties often characterized by frequent change, such as moulding ice-cream specialties, preparing decorative creams or decorating confections.

D

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures;
- the precise attainment of set limits, tolerances or standards.

E

Interests

- routine, concrete and organized work carried out according to detailed and sequential instructions;
- working with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards which is essential when processing food products.

SUGAR PROCESSING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with extracting, refining and processing sugar, molasses and sugar by-products from materials such as raw-cane sugar, sugar beets and corn. Worker functions include: operating or tending sugar processing equipment such as diffusers, presses, centrifuges, driers, kilns, mixers, filters, converters, crystallizers or evaporators. Work activities include: starting pumps, opening valves and setting temperature controls to regulate sugar refining processes; monitoring control panels to detect irregularities and making adjustments; obtaining samples of sugar solutions and crystallized sugar for testing; conducting pH and other routine processing tests; reactivating char used to filter sugar liquors; recording production data; and cleaning equipment and work areas.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8225-110	CORN-SUGAR-REFINERY OPERATOR (sugar)	3	5	8225-126	SUGAR BOILER (sugar)	3	4
8225-114	CARBONATION MAN (sugar)	3	5	8225-130	CORN-SUGAR-CRYSTALLIZER OPERATOR (sugar)	3	4
8225-118	DIFFUSER OPERATOR (sugar)	3	4	8225-134	CORN-SUGAR-FILTER OPERATOR (sugar)	3	4
8225-122	LIQUID-SUGAR OPERATOR (sugar)	3	4				

B

		GED	SVP			GED	SVP
8225-136	KNIFE SETTER (sugar)	3	4	8225-190	POLISHING-FILTER TENDER (sugar)	2	3
8225-138	LIQUOR-GALLERY TENDER (sugar)	3	4	8225-192	GLUCOSE-TRANSFER MAN (sugar)	2	2
8225-142	MELTER TENDER (sugar)	3	4	8225-194	TANKMAN (sugar)	2	2
8225-146	CRYSTALLIZER TENDER (sugar)	3	4	8225-198	BEET WASHER (sugar)	2	2
8225-150	FIREMAN, CHAR-KILN (food & bev., n.e.c.; sugar)	3	3	8225-202	FLUMER (sugar)	2	2
8225-152	STARCH CONVERTER (sugar)	3	3	8225-206	CUBE-MACHINE TENDER (sugar)	2	2
8225-154	CENTRIFUGAL-STATION TENDER, AUTOMATIC (sugar)	3	3	8225-210	ICING-SUGAR-MILL TENDER (sugar)	2	2
8225-158	CLARIFYING-EQUIPMENT TENDER (sugar)	3	3	8225-214	MINGLER TENDER (sugar)	2	2
8225-162	PULP-DRIER FIREMAN (sugar)	3	3	8225-218	SCREENING-MACHINE TENDER (sugar)	2	2
8225-166	SOFT-SUGAR MAKER (sugar)	3	3	8225-222	SUGAR-CHIPPER-MACHINE TENDER (sugar)	2	2
8225-170	CHAR-FILTER TENDER (sugar)	2	3	8225-226	SUGAR GRINDER (sugar)	2	2
8225-174	GRANULATOR TENDER (sugar)	2	3	8225-230	SUGAR PRESSER (sugar)	2	2
8225-178	BEET-PULP-PRESS TENDER (sugar)	2	3	8225-234	LIQUOR-GALLERY-TENDER HELPER (sugar)	2	2
8225-182	CENTRIFUGAL TENDER (sugar)	2	3	8225-238	CHAR-FILTER-TENDER HELPER (sugar)	2	2
8225-186	CORN-SUGAR-SYRUP COOLER AND DECOLOURIZER (sugar)	2	3				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	5	L 47	I 56	3	5-4	91	0Y	
		3		<u>3</u>	<u>4</u>				<u>3</u>		4							
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-M 46	I 456	3-2	4-2	913	2Y	
					<u>3</u>	5			<u>4</u>								2Y3	

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand sugar extracting and refining processes and to apply them when operating or tending processing equipment;
- form perception to make visual comparisons of material being processed in order to detect irregularities;
- eye-hand co-ordination and manual dexterity to read gauges or instruments and simultaneously adjust controls or valves, to control quality tests on product samples, or to use hand tools to prepare processing equipment;

- physical capacity to perform light to medium work;
- near visual acuity to read meters, gauges or instruments, primarily for occupations in Cluster A;
- capacity to work while exposed to noise from pumps, diffusers, agitators or shakers and in wet and humid areas;
- adaptability to hazardous conditions, such as working around sharp cutting knives, or in areas where risk of explosion exists.

Additionally, for Cluster A:

- spatial perception to control a mass flow balance of ingredients to maintain desired effect in a variety of extracting and refining processes.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to ten years of general education;

- six months to one year combined experience in jobs of a lesser complexity and on-the-job training.

B

- eight to ten years of general education;
- one week to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Experienced workers in this cluster with supervisory potential may advance to 8210-146 FOREMAN, SUGAR-PROCESSING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. With some additional training, advancement may also be to 8226-110 FOOD TESTER and 8226-130 SUGAR TESTER.

B

With experience and some additional training, workers in this cluster may advance to more skilled occupations within the cluster or in Cluster A. Those with supervisory potential may advance to 8210-146 FOREMAN, SUGAR-PROCESSING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Some occupations are considered as entry jobs and advancement is usually to higher skilled occupations within the cluster.

Transfer

Because of the specialized nature of the work, transfer possibilities for workers in this chapter are normally to appropriate occupations within the chapter requiring similar skills. However, with limited additional training, transfer may also be to other appropriate occupations in Minor Group 821/822, FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects, such as meters, gauges or dials.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example using results of quality tests to determine if equipment adjustments are required;
- the precise attainment of set limits, tolerances or standards as required when processing food products.

B

Interests

- non-social work, carried on in relation to processes, machines, and techniques;
- working with things and objects, such as wrenches, weighing devices or test apparatus;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: FOOD, BEVERAGE AND RELATED PROCESSING

WORK PERFORMED

This chapter includes occupations concerned with quality control activities in food and beverage processing. Worker functions include: working precisely to perform tests on food ingredients and finished products and ensure compliance with specified standards; compiling information to determine test procedures; analyzing test results; computing factors such as moisture, salinity, sugar content and percentages of ingredients in processed foods and beverages; comparing appearance, taste, smell or feel of foods and beverages; manipulating test equipment controls and devices such as scales, hydrometers, thermometers and magnifying glasses; and handling test samples and rejected items from food processing lines. Work activities include: collecting samples of raw materials or finished products; weighing packaged foods; and preparing reports, graphs and charts relative to inspection procedures.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8226-194 TASTER AND BUYER, BEVERAGES
(food & bev., n.e.c.)

4 7

B

GED SVP

8226-114 TEST BAKER
(bake. prod.; feed & flour mill.)

4 6

C

GED SVP

8226-110 FOOD TESTER (any ind.)
8226-198 BEER TESTER
(distill., brew. & ferment.)
8226-238 TESTER, FEED (feed & flour mill.)
8226-202 QUALITY-CONTROL TESTER,
BEER-BOTTLING LINE
(distill., brew. & ferment.)

4 6

4 6

4 5

3 5

GED SVP

8226-206 WINE TESTER
(distill., brew. & ferment.)
8226-242 BUTTERFAT TESTER (dairy)
8226-246 STARCH TESTER
(food & bev., n.e.c.)

3 5

3 5

3 4

D

GED SVP

8226-122 QUALITY-CONTROL INSPECTOR
(can. & preserv., n.e.c.; food & bev., n.e.c.)
8226-210 LIQUOR TESTER
(distill., brew. & ferment.)
8226-130 SUGAR TESTER (sugar)

3 5

3 5

3 4

GED SVP

8226-134 HONEY GRADER AND BLENDER
(food & bev., n.e.c.)
8226-154 COOKIE AND CRACKER TESTER
(bake. prod.)
8226-258 CAN INSPECTOR
(can. & preserv., n.e.c.; distill.,
brew. & ferment.; food & bev., n.e.c.)

3 4

2 3

2 3

E

GED SVP

8226-118 GRADER, MEAT
(slaught. & meat pack.)

3 6

GED SVP

**8226-126 GRADER, FRUIT-AND-
VEGETABLES**
(can. & preserv., n.e.c.)

3 5

CHAPTER 8226

8226-138	GRAIN INSPECTOR (feed & flour mill.)	3	4	8296-150T	GRAIN SAMPLER (whole. trade)	2	3
8226-250	GRADER, SEED CORN (agric.; feed & flour mill.)	3	4	8226-262	INSPECTOR, FOOD PACKAGING (feed & flour mill.; food & bev., n.e.c.)	2	3
8226-142	CHEESE GRADER (dairy)	2	4	8226-162	CANDY INSPECTOR (confection.)	2	2
8226-254	CASING GRADER (slaught. & meat pack.)	2	4	8226-166	GRADER, DRESSED POULTRY (slaught. & meat pack.)	2	2
8226-146	KOSHER INSPECTOR (dairy; food & bev., n.e.c.; slaught. & meat pack.)	3	2	8226-170	GRADER, GREEN MEAT (slaught. & meat pack.)	2	2
8226-150	TENDEROMETER TENDER (can. & preserv., n.e.c.)	2	3	8226-174	INSPECTOR, CANNED FOOD (can. & preserv., n.e.c.)	2	2
8226-158	GRADER, FISH (fish process.)	2	3	8226-214	BEVERAGE AND BOTTLE INSPECTOR (distill., brew. & ferment.; food & bev., n.e.c.)	2	2
8226-160	GRADER, SLICED BACON (slaught. & meat pack.)	2	3	8226-264	SAMPLER (dairy; distill.; brew. & ferment.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	3	4	4	3	4	4	4	5	4	S 47	I	4	7	19	9Y
B	<u>3</u>	3	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	5	<u>3</u>	L 47	I	4	6	19	90Y
C	<u>3</u>	3	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>3</u>	L 47	I	4-3	6-4	917 91	Y0
D	<u>3</u>	*3	3	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	<u>3</u>	L-M 47	I	3-2	5-3	19 193	Y0
E	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	<u>3</u>	L-M 47	I 4	3-2	6-2	13	2Y
					<u>4</u>	5	<u>3</u>		<u>4</u>		5						

APTITUDES AND CAPACITIES

Workers in this chapter require:

Beverage Tasters and Buyers:

- learning ability to acquire and apply the techniques of coffee and tea sampling, and reasoning ability to make accurate decisions regarding blending and purchasing of beverages;
- verbal ability to prepare and present blending formulae in written form so that they can be clearly understood by production workers.

Test Bakers:

- learning ability to become a baker, to acquire and apply techniques of testing bakery products, and to make judgments regarding the quality of test loaves and cakes;
- numerical ability to make quick and accurate arithmetical calculations when measuring and weighing ingredients;
- form perception to make visual comparisons of baked products to ensure texture and density conform to standards;
- clerical ability to avoid perceptual errors when recording test data or preparing reports;
- eye-hand co-ordination and manual dexterity to weigh and mix ingredients or to make batches of dough or batter;
- colour discrimination to ensure colour of baked product is appealing and meets specified standards.

Workers in Cluster C:

- learning ability to understand and apply a variety of test procedures and to interpret specifications and inspection data related to food and beverage testing;
- numerical ability to make accurate arithmetical computations when

measuring samples for mineral, protein, fat, acid and moisture content;

- form perception to make visual comparisons during quality tests to ensure that physical properties conform to standards;
- clerical perception to avoid errors when preparing graphs or charts or recording test results;
- eye-hand co-ordination and finger dexterity to use microscopes, gauges, micrometers, calculating machines or other equipment;
- manual dexterity to perform acidity, specific gravity, contamination or other quality tests;
- colour discrimination to examine samples for discolouration, or to accurately read colorimeter and spectrophotometer indications.

Workers in Cluster D:

- learning ability to understand and apply inspecting and testing procedures and reasoning ability to make judgments regarding quality of product;
- form perception to recognize differences in physical characteristics, such as size, clarity, deterioration and weight;
- eye-hand co-ordination and manual dexterity to use test equipment and measuring devices and to conduct quality tests on food and beverage samples;
- colour discrimination to detect differences in colour when comparing product with colour chart;
- sufficient strength to lift and carry bags of sugar and cases of liquor weighing up to fifty pounds.

Workers in Cluster E:

- learning ability to understand and apply a variety of routine inspecting, testing, grading and sampling procedures;
- form perception to recognize product defects such as surface blemishes on cheese, unremoved fins on fish, or bruised meats;
- eye-hand co-ordination to fill containers, remove articles from conveyors or package food products;
- manual dexterity to use hand tools or utensils to adjust equipment or trim meats;
- colour discrimination to ensure meats, cheese, fruits, vegetables, cereals and candy meet colour standards;

- physical capacity to perform light to medium work, such as lifting and carrying bags of seed corn, blocks of cheese, or cases of butter, and to finger and feel products to verify texture, firmness, size, shape and coarseness;
- adaptability to working in wet humid conditions, particularly in meat, poultry and fish processing establishments.

All workers in this chapter:

- near visual acuity to read graduations on measuring or weighing devices and to examine food and beverages quickly and accurately.

TRAINING AND ENTRY REQUIREMENTS**Workers in this chapter normally require:****A, B and C**

- ten to twelve years of general education, preferably with emphasis on biology, chemistry and mathematics.

D and E

- eight to ten years of general education;
- on-the-job training ranging from a short demonstration to two years, depending on the complexity of the quality control activity.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Some workers in this chapter may advance to occupations requiring higher skills within this chapter. Those who acquire the necessary additional training may advance to 2135-166 FOOD TECHNOLOGIST. Experienced workers who have supervisory potential and have acquired extensive knowledge of quality control activities may advance to 8210-130 FOREMAN, INSPECTING, TESTING, GRADING-AND-SAMPLING OCCUPATIONS: FOOD, BEVERAGE AND RELATED PROCESSING, or to other appropriate foreman occupations in Volume I, Unit Group 8210, FOREMEN: FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Occupations in this chapter are of a specialized nature and transfer possibilities are usually limited to other occupations concerned with a particular food or beverage product, for example, Test Bakers may transfer to 8213-114 BAKER. Some workers whose occupation requires only limited training may transfer to similar occupations within the chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Beverage Tasters and Buyers:**Interests**

- working with things and objects;
- work which is non-social in nature, carried on in relation to processes or techniques.

Temperaments

- the evaluation of information against sensory or judgmental criteria, for example tasting beverage to determine its acceptability;
- the precise attainment of set standards.

Test Bakers:**Interests**

- working with scales, baking equipment or other objects;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- the evaluation of information against judgmental criteria, for example determining quality of product by taste, feel or smell;
- the evaluation of information against measurable or verifiable criteria, such as comparing baked product against weight and volume standard;
- the precise attainment of set standards.

Workers in Cluster C:**Interests**

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the precise attainment of set limits or standards;
- the evaluation of information against measurable or verifiable criteria, for example comparing test results with specified standards to determine quality of product.

Workers in Cluster D:

Interests

- working with things and objects, such as thermometers, micrometers or weigh scales;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- the precise attainment of set standards;
- the evaluation of information against measurable or verifiable criteria, for example using equipment such as thermometers, hydrometers or testers to determine acceptability of product.

Workers in Cluster E:

Interests

- working with things and objects, such as sample containers, scales or hand tools;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences, such as collecting product samples;
- the precise attainment of set standards, as required when inspecting or grading food products.

OTHER REQUIREMENTS

Workers in this chapter who sample products to determine acceptability must possess an acute sense of taste and smell.

BEVERAGE PROCESSING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with processing beverage products such as coffee, tea, fruit juices, soft drinks, beer, wine and liquor. Worker functions include: operating and tending beverage processing equipment to crush, mix, grind, roast, cook or extract ingredients, and to malt, ferment, brew, carbonate, pasteurize, blend or distill beverages; and comparing beverage products and results of processing tests with specified standards. Work activities include: weighing ingredients or products; monitoring processing operations; moving switches, adjusting temperature or pressure controls, or turning valves to start machines or processing equipment; examining products; obtaining samples and conducting routine tests; recording production data; performing minor maintenance to processing equipment; and cleaning equipment and work areas.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8227-110	INSTANT-COFFEE-EXTRACTOR OPERATOR (food & bev., n.e.c.)	3	5	8227-174	WORT MAKER (distill., brew. & ferment.)	3	4
8227-258	GRAIN-MEAL PROCESSOR (distill., brew. & ferment.)	3	5	8227-270	FERMENTATION OPERATOR (distill., brew. & ferment.)	3	4
8227-262	STILL OPERATOR (distill., brew. & ferment.)	3	5	8227-298	YEAST-ROOM OPERATOR (distill., brew. & ferment.)	3	4
8227-266	LIQUOR BLENDER (distill., brew. & ferment.)	3	5	8227-178	BEER FILTERMAN (distill., brew. & ferment.)	3	3
8227-114	DRIER, INSTANT COFFEE (food & bev., n.e.c.)	3	4	8227-182	MASH MAN (distill., brew. & ferment.; food & bev., n.e.c.)	3	3
				8227-302	MALTSTER (distill., brew. & ferment.)	3	3

B

		GED	SVP			GED	SVP
8227-222	CIDER MAKER (distill., brew. & ferment.)	3	4	8227-234	WINE FINISHER (distill., brew. & ferment.)	2	3
8227-226	CELLARMAN, WINERY (distill., brew. & ferment.)	3	4	8227-238	WINE PASTEURIZER (distill., brew. & ferment.)	2	3
8227-118	COFFEE GRINDER (food & bev., n.e.c.)	3	3	8227-146	CITRUS-JUICE EXTRACTOR (can. & preserv., n.e.c.)	2	2
8227-186	KETTLE-MAN (distill., brew. & ferment.)	3	3	8227-150	FRUIT-PRESS TENDER (can. & preserv., n.e.c.; distill., brew. & ferment.)	2	2
8227-274	TANKMAN (distill., brew. & ferment.)	3	3	8227-154	JUICE BLENDER (can. & preserv., n.e.c.)	2	2
8227-122	COFFEE ROASTER (food & bev., n.e.c.)	2	4	8227-198	BEER PASTEURIZER (distill., brew. & ferment.)	2	2
8227-190	COOLING-MACHINE TENDER (distill., brew. & ferment.)	2	3	8227-202	YEAST PUSHER (distill., brew. & ferment.)	2	2
8227-194	CARBONATION MAN (distill., brew. & ferment.)	2	3	8227-278	COOKER TENDER (distill., brew. & ferment.)	2	2
8227-126	COFFEE BLENDER (food & bev., n.e.c.)	2	3	8227-306	SOFT-DRINK MIXER (food & bev., n.e.c.)	2	2
8227-230	CRUSHING-MACHINE TENDER (distill., brew. & ferment.)	2	3	8227-310	TEA BLENDER (food & bev., n.e.c.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	5		L-M 47	I 3467	3	5-3	91	Y0
				<u>3</u>	<u>4</u>	5			<u>4</u>	4	3							
B	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	4		L-M 2347	I 456	3-2	4-2	319	Y02
			5		<u>3</u>	4				5	5							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply the procedures and techniques required to operate or tend beverage processing equipment and reasoning ability to diagnose processing irregularities;
- form perception to make visual comparisons of materials during processing operations to detect divergence from specified standards;
- eye-hand co-ordination to read gauges and simultaneously turn valves or controls, or to use scales to weigh tea, ground coffee, milled grain or barrels of wine;
- manual dexterity to use hand tools to prepare and maintain equipment, or to use test apparatus to conduct quality tests on product samples;
- physical capacity to perform light to medium work such as lifting and carrying pails of caustic solution, boxes of instant coffee or bags of diatomic powder; workers in Cluster B require the ability to climb

stairs, maintain equilibrium on platforms and to stoop or bend while tending beverage processing equipment;

- near and far visual acuity to monitor gauges and instruments at varying distances;
- colour vision in occupations where colour is an essential characteristic in determining product quality;
- adaptability to working in wet and humid areas, and to conditions where there is a risk of burns from cleansing agents and hot liquor, or bodily injuries from exploding glass bottles; workers in Cluster A should have the capacity to work in conditions of heat, fumes and odours, and workers in Cluster B should have the capacity to work around machines that create considerable noise.

Additionally, for Cluster A:

- spatial perception to interpret irregularities in equipment operation from panelboard indicators.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to ten years of general education;
- one to twelve months of on-the-job training.

B

- eight to ten years of general education;
- on-the-job training ranging from a few days to six months depending on the complexity of the occupations.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to some occupations requiring higher skills within their individual cluster, or from Cluster B to A. With some additional training, advancement may also be to appropriate occupations in Chapter 8226, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: FOOD, BEVERAGE AND RELATED PROCESSING. Those with supervisory potential may also advance to 8210-114 FOREMAN, BEVERAGE-PROCESSING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Skills acquired by workers in this chapter are not readily transferable outside the beverage industry. Generally, transfers are to occupations requiring similar basic skills within the chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A**Interests**

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects, such as wrenches, thermometers and rulers

Temperaments

- the precise attainment of set standards or limits as required when processing beverages for human consumption;
- the evaluation of information against measurable or verifiable criteria, for example using test results to determine quality of product.

B**Interests**

- routine, concrete and organized work;
- working with things and objects, such as testing devices, hand tools and measuring devices;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- the precise attainment of set limits or standards;
- the evaluation of information against measurable or verifiable criteria, for example performing quality tests to determine acceptability of product;
- repetitive or short cycle operations carried out according to set procedures or sequences.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FOOD, BEVERAGE AND RELATED PROCESSING

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work found in food, beverage and related products processing establishments. Worker functions include: feeding materials into and offbearing products from machines that skin pork pieces, sort and wash fruit and vegetables, clean fish, chop nuts, grease baking pans or perform similar functions; and handling and moving raw materials or products between production and storage areas. Work activities include: wrapping, weighing and labelling meat and other food products; slaughtering, eviscerating, sorting and packing poultry; washing animal carcasses; shucking shellfish; cutting and pitting fruit; and cleaning equipment and work areas.

LIST OF OCCUPATIONAL TITLES

GED SVP			GED SVP		
<i>Labouring and Elemental Occupations: Slaughtering and Meat Cutting, Canning, Curing and Packing</i>			8228-190 SHELLFISH SHUCKER	1	2
			(fish process.)		
8228-110 CASING STRIPPER	1	2	8228-194 BRINER, FISH (fish process.)	1	1
(slaught. & meat pack.)			8228-198 FISH-BIN MAN (fish process.)	1	1
8228-114 SKINNING-MACHINE FEEDER	1	2	8228-202 LABOURER, SHELLFISH	1	1
(slaught. & meat pack.)			PROCESSING (fish process.)		
8228-118 MEAT PACKAGER (ret. trade)	1	2	8228-206 FISH RACKER (fish process.)	1	1
8228-120 POULTRY-COOLER WORKER	1	2	<i>Labouring and Elemental Occupations: Baking and Confectionery Making</i>		
(slaught. & meat pack.)			8228-224 BAKE-PAN GREASER (bake. prod.)	1	2
8228-122 SMOKED-MEAT PREPARER	1	2	8228-226 LABOURER (confection.)	1	2
(slaught. & meat pack.)			8228-230 LABOURER, BAKERY (bake., prod.)	1	2
8228-126 EVISCERATOR, POULTRY	1	2	8228-234 NUT-CHOPPING-MACHINE	1	1
(slaught. & meat pack.)			FEEDER (confection.)		
8228-130 GAMBRELER	1	2	8228-238 NUT SORTER (confection.)	1	1
(slaught. & meat pack.)			<i>Labouring and Elemental Occupations: Sugar Processing</i>		
8228-134 LABOURER, MEAT-PACKING PLANT (slaught. & meat pack.)	1	2	8228-258 CHAR-KILN-FIREMAN HELPER	1	2
8228-138 MEAT-LOAF TRIMMER	1	2	(sugar)		
(slaught. & meat pack.)			8228-260 CHAR PULLER	1	2
8228-142 NECK SKEWER	1	2	(food & bev., n.e.c.; sugar)		
(slaught. & meat pack.)			8228-261 KNIFE-SETTER HELPER (sugar)	1	2
8228-146 POULTRY SLAUGHTERER	1	2	8228-262 SUGAR-BOILER HELPER (sugar)	1	2
(slaught. & meat pack.)			8228-266 FLUMER HELPER (sugar)	1	1
8228-150 CARCASS WASHER	1	1	8228-270 BEET-WASHER HELPER (sugar)	1	1
(slaught. & meat pack.)			<i>Labouring and Elemental Occupations: Food, Beverage and Related Processing</i>		
8228-154 POULTRY HANGER	1	1	8228-290 FOOD-PROCESS LABOURER	1	2
(slaught. & meat pack.)			(food & bev., n.e.c.)		
8228-158 POULTRY PINNER	1	1	8228-294 MIXER HELPER (feed & flour mill.)	1	2
(slaught. & meat pack.)			8228-298 SORTING-MACHINE FEEDER	1	2
<i>Labouring and Elemental Occupations: Fish Canning, Curing and Packing</i>			(can. & preserv., n.e.c.)		
8228-178 FISH-CLEANING-MACHINE FEEDER (fish process.)	1	2	8228-302 WASHING-MACHINE FEEDER	1	2
8228-182 FISH-PROCESSING-MACHINE FEEDER (fish process.)	1	2	(can. & preserv., n.e.c.)		
8228-186 FISH ICER (fish process.)	1	2			

		GED	SVP			GED	SVP
8228-306	EDIBLE-OIL-PROCESS LABOURER (animal & veg. oil)	1	2	8228-318	LABOURER, YEAST PLANT (food & bev., n.e.c.)	1	2
8228-310	LABOURER, STARCH FACTORY (food & bev., n.e.c.)	1	2	8228-322	POTATO-CHIP SORTER (food & bev., n.e.c.)	1	1
8228-314	LABOURER, SYRUP PROCESSING (food & bev., n.e.c.)	1	2	8228-326	FRUIT SPLITTER (can. & preserv., n.e.c.)	1	1

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	L-H 34	I 45	1	2-1	13	23
		4				<u>3</u>		<u>4</u>	4							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand simple oral or written instructions and to apply them to perform a variety of routine and uncomplicated tasks;
- eye-hand-finger co-ordination and the ability to move the arms in any direction when slaughtering poultry, feeding food processing machines, or removing sub-standard foods from moving conveyors;
- manual dexterity to eviscerate poultry, weigh, wrap and pack food products, or shuck fresh or steamed shellfish;
- physical capacity to lift and carry bags of flour, tubs of vegetables,

- pails of lard and sacks of coffee weighing up to one hundred pounds; to push or pull hand trucks and wheelbarrows; and to stoop or bend when washing equipment or stacking cartons on pallets;
- adaptability to working in wet and damp areas where vegetables, poultry or animal carcasses are washed and cleaned, and in proximity to cookers, sterilizers and steam vats that raise humidity sufficiently high to cause physical discomfort;
- capacity to work close to wrapping and packaging machines, conveyors, defeathering machines, sterilizers or canning machines that are noisy and may cause discomfort or distraction.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specified minimum educational level, but eight years of schooling is preferred.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs and advancement is normally to higher skilled occupations in Minor Group 821/822 FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS for workers who demonstrate ability, interest and initiative.

Transfer

Transfer may be to occupations requiring similar skills within this chapter or to other occupations in labouring and elemental work in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- dealing with mechanical things, such as machines, hand trucks or weigh scales, and objects, such as cutting utensils or hand tools;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

GROUP 8229

FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with processing food and beverage products such as condiments, oils and fats, gelatine, yeast and unrefined chocolate.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
Condiments Processing Occupations																		
8229-110	FINISHER, DRESSINGS (food & bev., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	5	L 4	I	3	3	319	2Y
8229-114	RELISH MAKER (can. & preserv., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	4	H 34	I	3	3	391	2Y
8229-118	SPICE MILLER (food & bev., n.e.c.)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	H 47	I 7	2	4	319	2Y
8229-122	MIXER, DRESSINGS AND SAUCES (can. & preserv., n.e.c.; food & bev., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	H 4	I	2	3	319	2Y
8229-126	SPICE FUMIGATOR (food & bev., n.e.c.)	4	4	4	4	4	5	<u>4</u>	4	<u>4</u>	4	5	VH 4	I 6	2	3	319	23Y
8229-130	SPICE MIXER (food & bev., n.e.c.)	4	4	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	5	5	H 4	I 7	2	3	319	2Y
Oils and Fats Processing Occupations																		
8229-150	HYDROGENATION OPERATOR (animal & veg. oil)	<u>3</u>	4	3	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	5	M 2347	I 46	3	6	91	0Y
8229-154	MARGARINE PROCESSOR (animal & veg. oil)	<u>3</u>	4	3	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	3	H 47	I 3467	3	6	91	0Y
8229-158	VOTATOR TENDER (animal & veg. oil)	3	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	<u>3</u>	L 47	I 567	3	5	319	0Y
8229-162	OIL-CLARIFIER TENDER (animal & veg. oil)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 4	I 367	2	3	319	23Y
8229-166	ROLLER-ROOM MAN (animal & veg. oil)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	M 34	I 46	2	3	319	23
Gelatine Processing Occupations																		
8229-186	GELATINE-EXTRACTOR TENDER (food & bev., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	L 247	I	3	6	91	0Y
8229-190	GELATINE-EVAPORATOR-FILTER OPERATOR (food & bev., n.e.c.)	3	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	5	M 4	I 34	3	4	91	0Y
8229-194	EDIBLE-GELATINE PROCESSOR (food & bev., n.e.c.)	3	4	4	<u>3</u>	<u>3</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 47	I 45	3	3	91	0Y
8229-195	COOKER, GELATINE STOCK (food & bev., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	L 24	I 34	2	2	319	23Y
8229-198	GELATINE-STOCK MAKER (food & bev., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	M 47	I 4567	2	2	319	23Y
Yeast Processing Occupations																		
8229-218	MOLASSES-WORT PROCESSOR (food & bev., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	3	319	23Y
8229-222	YEAST-DRIER (distill., brew. & ferment.; food & bev., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	4	5	M 4	I	2	3	319	23Y
8229-226	YEAST MAKER (food & bev., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	3	319	23Y
8229-230	YEAST MIXER (food & bev., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	4	L 47	I	2	3	319	2Y
8229-234	YEAST CUTTER (food & bev., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I 6	2	2	319	23Y
8229-238	CENTRIFUGE TENDER, YEAST (food & bev., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	L 4	I 5	2	2	319	23Y
Unrefined-Chocolate Processing Occupations																		
8229-258	COCOA-BEAN PROCESSOR (confection.)	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	<u>3</u>	M 247	I 56	3	6	91	0Y94
8229-262	COCOA-BEAN ROASTER (confection.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	<u>3</u>	M 4	I 36	3	5	91	0Y9
8229-266	CHOCOLATE REFINER (confection.)	3	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	<u>3</u>	M 4	I 356	3	4	91	0Y9

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
8229-270	COCOA-POWDER MAKER (confection.)	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5	H 24	I 356	3	3	931	0Y
8229-274	COCOA-NIB GRINDER (confection.)	4	4	5	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	<u>3</u>	M 47	I 5	2	3	319	29Y
8229-278	COCOA-BEAN CLEANER (confection.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	H 4	I 37	2	2	319	23Y
8229-282	CHOCOLATE-CRUMB MAKER (confection.)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	319	23Y
8229-286	COCOA-BEAN-SHELLING-MACHINE TENDER (confection.)	4	4	4	4	4	4	<u>4</u>	4	<u>4</u>	4	5	H 4	I	2	2	319	23
8229-290	COCOA-BUTTER FILTERER (confection.)	4	4	5	4	4	4	<u>4</u>	4	<u>4</u>	4	5	H 47	I 5	2	2	319	23
8229-294	CHOCOLATE-PROCESSING HELPER (confection.)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	4	5	H 4	I 345	2	2	31	23
Other Food, Beverage and Related Processing Occupations																		
8229-314	VINEGAR MAKER (can. & preserv., n.e.c.)	<u>3</u>	3	3	4	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	5	4	M 23457	I 7	3	6	91	0Y4
8229-318	RETORT-BATTERY COOK (can. & preserv., n.e.c.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>	4	4	5	4	L 47	I 6	3	5	91	09Y
8229-322	COOK, KETTLE (can. & preserv., n.e.c.)	<u>3</u>	4	3	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	<u>3</u>	M 4	I 6	2	6	91	0Y9
8229-326	DRYING-DRUM TENDER (dairy; distill., brew. & ferment.; food & bev., n.e.c.)	4	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	4	H 47	I 367	3	4	91	2Y
8229-330	PEANUT-BUTTER MAKER (food & bev., n.e.c.)	4	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	4	M 47	I 56	3	4	913	20Y
8229-334	CORN-SYRUP MAKER (food & bev., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4	M 4	I 6	2	4	931	23Y
8229-338	MALT ROASTER (food & bev., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	<u>3</u>	M 47	I	3	3	931	20Y
8229-342	SYRUP MAKER (food & bev., n.e.c.)	4	4	4	4	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>4</u>	5	4	H 47	I 56	3	3	931	20Y
8229-346	HONEY PROCESSOR (food & bev., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 4	I	3	3	931	23Y
8229-350	INSTANTIZER TENDER (dairy; food & bev., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 47	I 5	2	4	319	23Y
8229-354	POTATO-CHIP FRYER (food & bev., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	<u>4</u>	L 47	I 4	2	4	319	23Y
8229-358	RETORT TENDER (can. & preserv., n.e.c.; fish process.; slaught. & meat pack.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 4	I 46	2	4	319	23Y
8229-362	CARAMEL-EQUIPMENT OPERATOR (food & bev., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	4	H 47	I 6	2	3	319	23Y
8229-366	COOK, VACUUM KETTLE (can. & preserv., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	M 4	I 47	2	3	319	20Y
8229-370	BRINE MIXER (can. & preserv., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 4	I 6	2	3	319	23Y
8229-374	MIXER, DRY FOOD (food & bev., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	<u>3</u>	H 47	I	2	3	319	23Y
8229-378	PULPER TENDER (can. & preserv., n.e.c.)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	4	M 4	I	2	3	319	23Y
8229-382	EGG BREAKER (food & bev., n.e.c.)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	<u>3</u>	L 47	I	2	2	319	23
8229-386	CENTRIFUGE TENDER (food prep., n.e.c.; can. & preserv., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	4	M 4	I	2	2	319	23Y
8229-390	CONTAINER WASHER, MACHINE (any ind.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 47	I 4	2	2	319	23Y
8229-394	COOK, FRY, DEEP FAT (can. & preserv., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	<u>3</u>	M 4	I 36	2	2	319	23Y
8229-398	CUTTER, FROZEN MEAT (fish process.;slaught. & meat pack.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	4	5	H 4	I 6	2	2	319	23
8229-402	FOOD-MIXING-MACHINE TENDER (can. & preserv., n.e.c.; confection.; food & bev., n.e.c.)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	5	5	H 4	I 46	2	2	319	23Y
8229-406	FOOD SLICER (dairy;slaught. & meat pack.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I 26	2	2	319	23Y
8229-410	PRESERVATIVE-DISPENSING MACHINE TENDER (can. & preserv., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	319	23Y
8229-414	TUMBLER TENDER (food & bev., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I 6	2	2	319	23

GROUP 8229

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8229-418	VINEGAR-MAKER HELPER (can. & preserv., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	M 4	I 4	2	2	319	23Y
8229-422	CANNERY WORKER (can. & preserv. n.e.c.)	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	3	L 47	I 5	2	2	31	23
8229-426	FROZEN-DINNER PREPARER (cater. & lodg.; can. & preserv., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 4	I 234	2	2	31	23
8229-430	COOK HELPER (can. & preserv., n.e.c.)	4	4	4	4	4	5	<u>4</u>	4	<u>3</u>	4	5	H 34	I 4	2	2	31	23
8229-434	FOOD-PROCESSING-EQUIPMENT CLEANER (food & bev., n.e.c.)	4	4	5	5	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 234	I 456	2	2	31	23
8229-438	FREEZER MAN (can. & preserv., n.e.c.; fish process.)	4	4	5	4	4	5	<u>3</u>	4	<u>3</u>	4	5	H 4	I 2	2	2	31	23

SAWMILL SAWYERS AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with processing logs into rough lumber, and sawing, splitting and planing rough lumber into stock of various sizes. Worker functions include: operating, tending or feeding circular saws, band saws or other lumber-mill equipment to cut logs or lumber to specified dimensions; compiling data through observation of logs to determine cuts that will produce optimum grade and amount of lumber; and comparing size and appearance of cut stock to specified standards. Work activities include: adjusting machine blades or cutters for depth and width of cut required; moving hand and foot controls to start, stop and regulate speed of equipment; and cutting out defective sections in wood stock.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8231-110	HEAD-SAW OPERATOR (sawmill)	3	6	8231-126	GANG SAWYER, LOG (sawmill)	3	5
8231-114	EDGER MAN, AUTOMATIC (sawmill)	3	5	8231-130	LUMBER-SIZER OPERATOR (sawmill)	3	5
8231-118	TRIMMER MAN (sawmill)	3	5	8231-134	LOG-CUT-OFF SAWYER, AUTOMATIC (sawmill)	3	4
8231-122	GANG SAWYER, CANT (sawmill)	3	5				

B

		GED	SVP			GED	SVP
8231-138	LOG-CUT-OFF SAWYER (sawmill)	3	4	8231-162	SCRAP CUT-OFF SAWYER (sawmill)	2	3
8231-142	TRIMMING-MACHINE OPERATOR (sawmill)	3	4	8231-166	SHAKE SAWYER (sawmill)	2	3
8231-146	SHAKE SPLITTER (sawmill)	2	4	8231-170	BLOCK SAWYER, BARREL ENDS (sawmill)	2	2
8231-150	EDGER MAN (sawmill)	2	3	8231-174	SPLITTERMAN (pulp & paper; sawmill)	2	2
8231-154	SHINGLE SAWYER (sawmill)	2	3				
8231-158	STAVE-BOLT SAW OPERATOR (sawmill)	2	3				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	4	<u>3</u>	4	5	<u>3</u>	<u>4</u>	4	<u>4</u>	5	L 47	I 5	3	6-4	913	9Y20 9Y2
B	4	4	4	4	4	5	<u>3</u>	4	<u>3</u>	4	5	L-H 47	I 567	3-2	4-2	913	29Y 23Y

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand lumber-milling methods and techniques and to follow instructions;
- spatial perception to operate, adjust and repair machines and to align logs and lumber on feeding mechanisms;
- eye-hand co-ordination to synchronize controls of log carriages, saws, conveyers and other lumber-mill machines;
- manual dexterity to work with the hands easily and skilfully when

moving controls and adjusting machines or when using work aids to clear jammed equipment;

- visual acuity, near and far, to perform activities such as adjusting machines and guiding and positioning materials on machines;
- capacity to work and remain alert in the presence of loud noises and vibrations from machines, with occasional exposure to hazards such as moving parts, flying particles and dust.

CHAPTER 8231

Workers in Cluster A also require:

- finger dexterity to use tools and other work aids when adjusting or maintaining machines;
- eye-hand-foot co-ordination, to move hand and foot controls simultaneously, and occasionally to climb or balance on or around equipment.

Workers in Cluster B also require:

- physical strength, for some occupations, to perform heavy work requiring lifting and carrying lumber and wooden blocks weighing up to fifty pounds;
- capacity to work while exposed to hazards such as moving parts, flying particles and dusty conditions.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten years of general education;
- three months to two years of on-the-job training.

B

- eight to ten years of general education;
- from two weeks to six months of on-the-job training, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in Cluster B who acquire additional training may advance to some occupations in Cluster A. Workers in both clusters with supervisory potential may advance to 8230-122 FOREMAN, SAWMILL SAWYERS AND RELATED OCCUPATIONS. See also Chapters 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations within their individual cluster. Experienced workers may also transfer to occupations in Chapter 8236 INSPECTING, TESTING, AND GRADING OCCUPATIONS: WOOD PROCESSING, EXCEPT PAPER PULP, for example 8236-114 GRADER, LUMBER, and 8236-118 SHINGLE INSPECTOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- activities that are basically non-social in nature and are carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- routine, concrete and organized activities.

Temperaments

A

- the evaluation of information against sensory or judgmental criteria, such as observing characteristics of logs or lumber to determine optimum usage;
- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

Additionally, for 8231-138 LOG-CUT-OFF SAWYER, 8231-142 TRIMMING-MACHINE OPERATOR, 8231-150 EDGER MAN and 8231-154 SHINGLE SAWYER:

- the evaluation of information against sensory or judgmental criteria, such as determining the number of usable lengths to be cut from lumber and the most profitable utilization of material.

PLYWOOD MAKING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with peeling, slicing, gluing, pressing and trimming veneer to form plywood panels. Worker functions include: operating, tending or feeding machines such as lathes, presses, scarfing machines and shears to process veneers; comparing appearance and dimensions of veneer and panels to specified standards; and manipulating tools such as router, caulking gun, putty knife and brush to repair or patch defects. Work activities include: adjusting knives, pressure bars, and other machine components according to dimensions of veneer to be cut; moving levers, pressing buttons or turning valves to start, stop and regulate equipment; measuring thickness of veneer; examining sheets or strips for splits, cracks and other defects; and matching veneer strips according to grain, pattern, texture and shade.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8233-110	PANEL-SANDING-MACHINE OPERATOR (veneer & plywood)	3	5	8233-114	PLYWOOD-PANEL GROOVER OPERATOR (veneer & plywood)	3	4
8233-112	VENEER-LATHE OPERATOR (veneer & plywood)	3	5	8233-118	VENEER-SLICING-MACHINE OPERATOR (veneer & plywood)	3	4

B

		GED	SVP			GED	SVP
8233-116	PLYWOOD PATCHER, HAND (veneer & plywood)	3	4	8233-130	SCARF GLUER (veneer & plywood)	2	3
8233-126	VENEER MATCHER (veneer & plywood)	3	3	8233-134	VENEER TAPER (veneer & plywood)	2	3

C

		GED	SVP			GED	SVP
8233-122	HOT-PLATE-PRESS TENDER (veneer & plywood)	3	4	8233-158	VENEER-REEL TENDER (veneer & plywood)	2	3
8233-138	PLYWOOD PATCHER, MACHINE (veneer & plywood)	2	3	8233-162	VENEER-SPLICER TENDER (veneer & plywood)	2	3
8233-142	VENEER-CLIPPER TENDER, AUTOMATIC (veneer & plywood)	2	3	8233-166	VENEER JOINTER (veneer & plywood)	2	3
8233-146	CORE-LAYING-MACHINE TENDER (veneer & plywood)	2	3	8233-170	GLUE SPREADER (veneer & plywood)	2	3
8233-150	SCARFING-MACHINE TENDER (veneer & plywood)	2	3	8233-174	LATHE SPOTTER (veneer & plywood)	2	2
8233-154	VENEER CLIPPER (veneer & plywood)	2	3	8233-178	HOT-PLATE-PRESS-TENDER HELPER (veneer & plywood)	2	2
				8233-182	PLYWOOD-PANEL ASSEMBLER (veneer & plywood)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5	L-M 47	I 56	3	5-4	913	Y0	
				<u>4</u>	<u>4</u>	5					4							
B	<u>3</u>	4	4	4	<u>3</u>	5	<u>3</u>	4	<u>3</u>	4	4	L-M 47	I 56	3-2	4-3	913	20Y	
	<u>4</u>			<u>3</u>		4		<u>3</u>	<u>4</u>	5	5						23Y	
C	4	4	4	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	4	5	L-H 3457	I 567	3-2	4-2	139	23Y	
			5	5	<u>3</u>	4	<u>4</u>			5								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply the techniques of veneer and plywood making operations and to carry out instructions;
- form perception to match veneer according to grain and pattern or to discern defects such as knots, pitch pockets and holes in veneer or plywood;
- eye-hand-finger co-ordination and manual dexterity to adjust machine controls, position workpieces and use measuring instruments and tools;
- physical strength, particularly for workers in Cluster C, to lift and carry materials weighing up to fifty pounds;
- capacity to work in close proximity to machines that generate considerable noise;
- adaptability to working conditions in which there is exposure to a

variety of hazards, such as moving mechanical parts of machines, burns from hot-plate presses and dust.

Workers in Clusters A and B also require:

- spatial perception, especially for operators, to understand the correct functioning and relationship of machine parts in order to operate and make adjustments to equipment.

Workers in Cluster B also require:

- finger dexterity, particularly for 8233-116 PLYWOOD PATCHER, HAND to manipulate tools when repairing defects in plywood panels.

Workers in Cluster C also require:

- agility to work in awkward positions, such as stooping and bending while loading and unloading presses and handling plywood and equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten years of general education;
- three months to one year of on-the-job training.

B

- eight to ten years of general education;
- one to six months of on-the-job training.

C

- eight to ten years of general education;
- two weeks to four months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With some additional training, workers in this chapter may advance to occupations requiring higher skills within their individual cluster, or from Cluster C to B and A. Those with experience and supervisory potential may also advance to 8230-118 FOREMAN, PLYWOOD MAKING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within this chapter, or to appropriate occupations in other chapters, for example, 8326-126 GRADER, VENEER AND PLYWOOD.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social activities, carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- routine, concrete and organized activities.

Temperaments**A**

- the precise attainment of set limits, tolerances, or standards;
- the evaluation of information against measurable or verifiable criteria.

B and C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

Additionally for 8233-116 PLYWOOD PATCHER, HAND and 8233-126 VENEER MATCHER:

- the evaluation of information against measurable or verifiable criteria.

WOOD TREATING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with seasoning or conditioning wood, treating wood with preservatives and fire-retardants, and producing wood conglomerates such as particle board, hardboard and artificial fuel logs. Worker functions include: operating or tending equipment such as kilns, tanks, steam cookers and grinding machines; compiling data from meters, gauges and charts to ensure materials are processed according to specifications; comparing dimensions, weight and appearance of finished articles to establish standards; and recording daily production. Work activities include: moving controls such as levers, buttons and valves to start, stop and regulate treating processes; monitoring control panels and making necessary adjustments; measuring or weighing articles; and examining products for defects.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8235-110	KILN OPERATOR (woodworking)	4	6	8235-126	PRESS-LINE OPERATOR, PARTICLE BOARD	3	5
8235-114	GRINDING-MACHINE OPERATOR, HARDBOARD (woodworking)	4	6		(woodworking)		
8235-118	FORMING-LINE OPERATOR, HARDBOARD (woodworking)	3	6	8235-130	TIMBER-TREATING-TANK OPERATOR (woodworking)	3	5
8235-122	FORMING-MACHINE OPERATOR, PARTICLE BOARD (woodworking)	3	6				

B

		GED	SVP			GED	SVP
8235-134	VENEER-DRYER TENDER (veneer & plywood)	2	4	8235-154	TEMPERING-PLANT TENDER (woodworking)	2	3
8235-138	DRYER TENDER, WOOD PARTICLES (woodworking)	2	4	8235-158	DIP-TANK TENDER (woodworking)	2	3
8235-142	FUEL-LOG MAKER (woodworking)	2	4	8235-162	INCISING-MACHINE TENDER (woodworking)	2	3
8235-146	CHIP-MIXING-MACHINE TENDER (woodworking)	2	3	8235-166	HUMIDIFIER TENDER (woodworking)	2	3
8235-150	HARDBOARD-OILING-MACHINE TENDER (woodworking)	2	3	8235-170	LOG COOKER (veneer & plywood)	2	3
				8235-174	TIMBER-TREATING-TANK- OPERATOR HELPER (woodworking)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	4	L-M 457	I 356	4-3	6-5	91	0Y4	
		3	3	<u>4</u>	<u>4</u>												0Y	
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-M 47	I-O 3567	2	4-2	319	20Y	
					<u>3</u>	5	<u>3</u>		<u>4</u>	4	4						23Y	

APTITUDES AND CAPACITIES

Workers in these clusters require:

— learning ability to understand and apply a variety of instructions for the operation or tending of wood-treating equipment;

— form perception to discern deviations from standards in quality of finished products;

- eye-hand-finger co-ordination and manual dexterity to weigh samples, manipulate tools and work aids and handle materials and products;
- near visual acuity to read gauges, meters and other measuring instruments;
- ability to work, usually inside, while exposed to extreme heat from equipment such as kilns and steam-heated dryers;
- capacity to work in close proximity to machines that generate considerable noise;

- adaptability to working where there are hazards such as steam and hot liquids, moving parts of machines and fumes from preservative liquids.

Additionally, for Cluster A:

- spatial perception to visualize desired characteristics of end products and to understand the functions and relationship of machine parts in order to operate and adjust wood-treating equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- six months to two years of on-the-job training.

B

- eight to ten years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Possibilities for advancement for workers in both clusters may be to higher skilled occupations in their respective cluster. Some workers in Cluster B may, with limited additional training, advance to occupations in Cluster A. Those with supervisory potential may advance to 8230-126 FOREMAN, WOOD TREATING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in both clusters may transfer to other occupations within their cluster. Experienced workers may, with limited additional training, also transfer to appropriate occupations in Chapter 8236, INSPECTING TESTING AND GRADING OCCUPATIONS: WOOD PROCESSING, EXCEPT PAPER PULP.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- activities that are usually non-social in nature and are carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster B:

- activities of a routine, concrete and organized nature.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria to arrive at decisions;
- the precise attainment of set limits, tolerances or standards.

Additionally, for 8235-110 KILN OPERATOR and 8235-114 GRINDING-MACHINE OPERATOR, HARDBOARD:

- the direction and planning of an entire activity or the activities of others.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

INSPECTING, TESTING AND GRADING OCCUPATIONS: WOOD PROCESSING, EXCEPT PAPER PULP

WORK PERFORMED

This chapter includes occupations concerned with quality control activities in the processing of lumber and other wood products, except paper pulp. Worker functions include: comparing characteristics of lumber, telephone poles, shingles, plywood panels and other processed items to specified standards; compiling data from specifications to determine appropriate inspection procedures and standards of quality; handling lumber and wood products; manipulating marking tools and measuring instruments; and recording inspection, grading or test results. Work activities include: determining moisture content of treated poles; examining products for knots, splits and other defects; measuring dimensions; and grading products according to texture, size, colour and other specifications.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8236-110	TREATED-POLE TESTER (woodworking)	3	4	8236-122	POLE INSPECTOR (woodworking)	2	4
8236-114	GRADER, LUMBER (sawmill; woodworking)	3	4	8236-126	GRADER, VENEER AND PLYWOOD (veneer & plywood)	2	3
8236-118	SHINGLE INSPECTOR (sawmill)	3	3	8236-130	TIE-AND-TIMBER INSPECTOR (sawmill)	2	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	5	4	L-M	347	I-O	5	3-2	4-3	913
3				3				<u>4</u>									0Y2

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow quality control procedures and techniques in the processing of lumber and other wood products;
- numerical ability to make measurements and calculations quickly and accurately;
- form perception to inspect lumber for defects such as knots, stains, faulty edges and worm holes, to perform routine tests and to grade lumber;

- clerical ability to take measurements, record test results or write reports;
- eye-hand co-ordination and manual dexterity to handle measuring and testing instruments and products;
- physical capacity to perform light to medium work involving reaching for and handling lumber or wood products, with frequent stooping and bending to inspect and mark grade or identification;
- adaptability to work either inside or outside while exposed to loud continuous noises from woodworking machinery.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;
- three to twelve months experience in a related occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter with supervisory potential, may advance to 8230-110 FOREMAN, INSPECTING, TESTING AND GRADING OCCUPATIONS, WOOD PROCESSING. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations within the chapter, or to appropriate occupations in Minor Group 823, WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS**Interests**

Persons seeking entry to occupations in this cluster require significant interests in, and dispositions for work involving the following:

- work of a non-social nature, carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- routine and organized work.

Temperaments

- the evaluation of information against measurable or verifiable criteria, as in the examination and testing of wood products to ensure adherence to specifications;
- the precise attainment of set standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: WOOD PROCESSING, EXCEPT PAPER PULP

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in the processing of logs and rough lumber to make dressed stock, plywood, wood conglomerates and similar products. Worker functions include: handling logs, lumber and wood stock in a sawmill, shingle mill, plywood mill or lumber yard; feeding materials into cutting, pressing or drying machines; and comparing appearance of lumber to specified standards, in order to sort pieces by length and grade markings, or to detect defects. Work activities include: loading and unloading railway cars, trucks, barges and conveyors; stacking materials into piles; manually peeling bark from logs; and cleaning machines and work areas.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8238-110	SHINGLE TRIMMER (SAWMILL)	1	2	8238-126	LABOURER, WOOD-PRESERVING PLANT (woodworking)	1	2
8238-114	VENEER-STRIP-CUT-OFF SAWYER (veneer & plywood)	1	2	8238-130	LOG PEELER, HAND (sawmill; veneer & plywood)	1	2
8238-118	LABOURER, PLYWOOD AND VENEER PLANT (veneer & plywood)	1	2	8238-134	SAWMILL LABOURER (sawmill; woodworking)	1	2
8238-122	LUMBER SORTER (sawmill)	1	2	8238-138	BARKING-MACHINE CLEANER (pulp & paper; sawmill)	1	1

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M-H 2347	I-O 567	1	2-1	31	23
	5	4							5							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple instructions and perform a variety of uncomplicated tasks;
- form perception to visually inspect shingles, plywood or veneer for defects, or to sort lumber according to grade and size;
- eye-hand-finger co-ordination and manual dexterity to load, unload, position and sort materials and products, and use tools;
- physical capacity to perform medium to heavy work requiring frequent lifting, carrying, reaching and handling of materials, products and tools weighing up to fifty pounds;

- agility, for some workers, to climb onto railway cars or trucks and to balance on wood stock or log piles;
- physical capacity to bend and stoop when feeding materials into machines, sorting and stacking materials, and cleaning equipment;
- near visual acuity for activities such as examining logs for embedded objects inspecting shingles for defects, or sorting lumber and wood products according to grade, markings or size;
- adaptability to work, usually inside, while exposed to constant or intermittent noise from machines and equipment, and to hazardous conditions, such as close proximity to moving parts of machines and exposure to fumes and odours from wood preservatives.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- six to eight years of general education;

- on-the-job training ranging from a short demonstration up to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement possibilities for workers in this chapter, who demonstrate ability, interest and initiative, may be to more skilled occupations in Minor Group 823, WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within the chapter, or to appropriate labouring and other elemental occupations in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized activities;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with removing bark from logs, trimming pressed board or plywood panels and reducing logs to chips, excelsior or wood flour. Worker functions include: operating or tending barking machines, sizing saws, pulverizers or chipping machines; and comparing appearance and dimensions of processed wood-products to specified standards. Work activities include: pushing buttons or moving levers to start and stop machines; adjusting guides and cutting knives; regulating conveyor speeds; clearing blockages; and cleaning equipment and work areas.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8239-110	HYDRAULIC-BARKER OPERATOR (pulp & paper; sawmill)	3	4	8239-118	RING-BARKER OPERATOR (sawmill)	2	4
8239-114	BARKING-MACHINE OPERATOR (pulp & paper; woodworking)	2	4	8239-122	DRUM-BARKER TENDER (pulp & paper; sawmill)	2	4

B

		GED	SVP			GED	SVP
8239-126	MILLER, WOOD FLOUR (woodworking)	2	4	8239-142	SAWMILL WORKER (sawmill)	2	3
8239-130	SIZING-SAW TENDER (veneer & plywood; woodworking)	2	4	8239-146	EXCELSIOR-MACHINE TENDER (woodworking)	2	2
8239-134	CHIPPERMAN (pulp & paper; sawmill; woodworking)	2	3	8239-150	HOG-MACHINES TENDER (sawmill)	2	2
8239-138	LUMBER SORTER, MACHINE (sawmill)	2	3	8239-154	SCREENMAN, CHIPS (pulp & paper; sawmill; woodworking)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	4	4	5	<u>3</u> 4	4	5	<u>3</u> 4	4	<u>3</u> 4	4	5	L-M 47	I-B 5	3-2	4	913	20Y
B	4	4	5	4	<u>4</u> 3	5	<u>4</u> 3	4	<u>3</u> 4	4	5	M-H 47	I 5	2	4-2	319	23Y

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand written or oral instructions and apply them when operating or tending log or wood-processing equipment;
- eye-hand co-ordination to adjust controls, operate overhead hoists or clear conveyor blockages;
- manual dexterity when using hand tools to replace or repair cutting tools, screens or conveyor belts;
- physical capacity to perform light to heavy work, lifting one hundred pounds with frequent lifting or carrying of objects weighing up to fifty pounds, depending on the occupation involved; such as, lifting sacks of wood flour, rolling logs or shovelling spilled scrap;
- visual acuity, both near and far, to inspect wood flour and to observe wood-processing operation from varying distances;

- adaptability to both inside and outside work conditions, and to loud noises from saws, pulverizers or barking machines.

Additionally, for Cluster A:

- spatial perception to correctly set cutting heads, rotating knives or water-jet nozzles to bark logs;
- eye-hand-foot co-ordination for 8239-110 HYDRAULIC-BARKER OPERATOR to simultaneously operate hand and foot controls that regulate wash water and log rotation.

Additionally, for Cluster B:

- form perception to visually examine logs or lumber for physical defects such as decayed wood, imbedded stones or poor sawing.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;
- one to six months of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers with supervisory abilities and a potential for leadership may advance to appropriate occupations in Volume I, Unit Group 8230, FOREMEN: WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within the chapter. With limited additional training, transfer may also be to other appropriate occupations requiring similar basic skills in Minor Group 823, WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- activities that are non-social in nature and are carried on in relation to sawmill processes, machines and techniques;
- dealing with things and objects;
- activities of a routine, concrete and organized nature.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards;

Additionally,

for Cluster A:

- the evaluation of information against measurable or verifiable criteria, such as setting guides and saws to required dimensions of panels, using rule and hand tools.

for Cluster B:

- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

CELLULOSE PULP PREPARING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with reducing logs, rags, scrap, pulp and similar cellulose materials to pulp slurry. Worker functions include: operating and tending machines that grind logs or wood chips into fibres used in making wood pulp, or controlling equipment to mix, screen, refine, cook, bleach, wash and dry pulp material. Work activities include: monitoring control panels of bleachers, digesters and screening-room equipment; adjusting temperature and pressure controls; starting pumps and turning valves to regulate flow of water, pulp and chemicals; collecting samples of fluids and pulp during processing; cleaning, adjusting and lubricating equipment; and cleaning work areas.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8251-110	CONTINUOUS-DIGESTER OPERATOR (pulp & paper)	4	7	8251-126	BEATER OPERATOR (pulp & paper)	3	5
8251-114	BLEACHER OPERATOR, PULP (pulp & paper)	4	6	8251-130	GRINDER MAN (pulp & paper)	3	5
8251-118	DIGESTER OPERATOR (pulp & paper)	4	6	8251-134	PULP-DRIER OPERATOR (pulp & paper)	3	4
8251-122	SCREEN-ROOM OPERATOR (pulp & paper)	3	6	8251-138	BROWN-STOCK WASHER (pulp & paper)	3	4
				8251-142	PULP-REFINER OPERATOR (pulp & paper)	3	4

B

		GED	SVP			GED	SVP
8251-146	BLEACHER TENDER (pulp & paper)	3	4	8251-150	CONTINUOUS-DIGESTER TENDER (pulp & paper)	3	4

C

		GED	SVP			GED	SVP
8251-154	SCREENMAN (pulp & paper)	3	4	8251-174	BLEACHER, RAG STOCK (pulp & paper)	2	3
8251-158	DIGESTER TENDER (pulp & paper)	3	3	8251-178	BLOW-PIT MAN (pulp & paper)	2	3
8251-162	BROWN-STOCK-WASHER HELPER (pulp & paper)	2	3	8251-180	KNIFE SETTER, CHIPPER MACHINE (pulp & paper)	2	2
8251-166	SCREENMAN, PAPER MACHINE (pulp & paper)	2	3	8251-182	BLEACH-BOILER TENDER (pulp & paper)	2	2
8251-170	BEATER TENDER (pulp & paper)	2	3	8251-186	BROKE-BEATER MAN (pulp & paper)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	4	L 4567	I 457	4-3	7-4	93	Y0
	4	3	3		<u>4</u>				<u>3</u>		3	L-M 247					
B	3	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	3	L 4567	I 57	3	4	91	0Y
									5								
C	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	L-M 24	I 4567	3-2	4-2	913	23Y
			5			4				5	3						

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand cellulose pulp processing machinery operating and support activities and to carry out detailed written or oral work instructions;
- form perception to make visual comparisons and see slight differences in consistency of materials;
- eye-hand co-ordination and manual dexterity to move controls and turn valves to regulate flow of materials while observing gauges and indicating devices, start and stop pumps, conveyors and other equipment, and to collect samples and perform production quality control tests;
- ability, for some workers, to give clear oral instructions to others;
- good hearing for most workers, but particularly for digester operations and bleacher operators, to detect noises indicating malfunctioning equipment or processing cycles;

- near visual acuity to observe gauges and lighted flow diagrams on control panels and to take readings with a variety of instruments, such as hydrometers and pH meters;
- colour vision to monitor indicator lights on control panels and to perform titration tests;
- adaptability to working in unpleasant environmental conditions, such as wetness and humidity, close proximity to noisy equipment, and exposure to odours and noxious fumes;
- agility to climb steps and ladders on machines or vats to monitor operations or to adjust or clean equipment.

Additionally, for Cluster A:

- spatial perception to monitor control panels to locate malfunctioning equipment, or inconsistent material flow or product process.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- six months to four years of related experience and on-the-job training, depending on the complexity of the occupation.

B

- ten years of general education;
- three to six months of related experience and on-the-job training.

C

- eight to ten years of general education;
- on-the-job training ranging from a short demonstration to four months.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may advance to more highly skilled occupations within their own cluster, or with some additional training from Cluster C to B, and to A. Experienced workers with supervisory potential may advance to 8250-110 FOREMAN, CELLULOSE-PULP-PREPARING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities for workers in this chapter may be to other occupations requiring similar skills within their individual cluster, or in some instances with limited additional training to occupations in other clusters. Experienced workers may also transfer to appropriate occupations in Chapter 8256, INSPECTING TESTING, GRADING AND SAMPLING OCCUPATIONS, PULP AND PAPERMAKING.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster C:

- routine, concrete and organized work.

Temperaments

A and B

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

PAPERMAKING AND FINISHING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with making paper, paper pulp and paperboard, imparting gloss and finish to paper, and forming insulation board. Worker functions include: operating, tending or feeding machines that make paper or insulating board from pulp stock, or dry, size, calender, wind, coat, laminate or cut sheet pulp or paper for further processing. Work activities include: turning valves and setting panel controls to regulate flow of materials into machines; adjusting temperatures, pressures and speed of rolls; observing material coming off machines for defects such as dirt, wrinkles, lumps or tears; performing routine tests; recording production; and cleaning and adjusting machines.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8253-110	FOURDRINIER-MACHINE OPERATOR (pulp & paper)	4	7	8253-130	COATING-MACHINE OPERATOR (paper prod. & paper)	3	4
8253-114	CYLINDER-MACHINE OPERATOR (pulp & paper)	4	7	8253-134	COMBINER-MACHINE OPERATOR (paper prod.)	3	4
8253-118	BACK TENDER, PAPER MACHINE (pulp & paper)	3	6	8253-138	SUPERCALENDER OPERATOR (pulp & paper)	3	4
8253-122	PAPER-COATING-MACHINE OPERATOR (paper & prod.)	3	5	8253-142	HIGH-DENSITY-FINISHING OPERATOR (pulp & paper)	3	4
8253-126	WINDERMAN, PAPER MACHINE (pulp & paper)	3	5				

B

		GED	SVP			GED	SVP
8253-146	SUPERCALENDER-OPERATOR HELPER (pulp & paper)	2	3	8253-174	PAPER COATER (pulp & paper)	2	2
8253-150	PRESS TENDER, INSULATION BOARD (paper prod.)	2	3	8253-178	PULP-PRESS TENDER (pulp & paper)	2	2
8253-154	LAYBOY TENDER (paper prod.; pulp & paper; print & pub.)	2	3	8253-180	REELER, WALLPAPER (paper, prod.)	2	2
8253-158	PAPER-MACHINE HAND (pulp & paper)	2	3	8253-182	REWINDER, PROCESSED PAPER (paper prod.)	2	2
8253-162	CARBON-PAPER CUTTER (paper prod.)	2	2	8253-186	REWINDER TENDER (paper prod.)	2	2
8253-166	DRIER TENDER, INSULATION BOARD (paper prod.)	2	2	8253-190	VARNISHING-MACHINE TENDER (misc. prod. fab., n.e.c.)	2	2
8253-170	FRICTION-PAINT-MACHINE TENDER (paper prod.)	2	2	8253-194	COATING-MACHINE-OPERATOR HELPER (paper prod.)	2	2
				8253-198	COMBINER-MACHINE-OPERATOR HELPER (paper prod.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	4	L 24567	I 345	4-3	7-4	91	Y0	
	4	3				"	<u>4</u>		<u>4</u>	4	5	M 457	I 5					
B	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	L-H 347	I 5	2	3-2	931	23Y	
			5	5	<u>3</u>	4			<u>3</u>	5								

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply the procedures for operating paper making and finishing machinery;
- spatial perception to visualize factors such as the ingredient type, flow and mix required to achieve the specified product from machine being operated;
- form perception to inspect product for such defects as dirt, slime spots, holes, scratches and wrinkles to ensure correct operation of production process;
- eye-hand co-ordination and manual dexterity to adjust panel and machine controls, turn valves and handwheels, thread stock through rollers and cut samples from processed rolls for test purposes;
- adaptability to work while exposed to loud continuous noise in a wet, humid and hot environment.

B

- learning ability to tend auxiliary paper making machinery, and help machinery operators;
- form perception to detect spots, holes, wrinkles, cockled edges and dirt in production paper;
- eye-hand co-ordination and manual dexterity to set up machines and equipment, adjust controls and handle and load product;
- strength to perform light to heavy work frequently requiring lifting of articles from small hand tools to paper reel axles weighing fifty pounds;
- agility to work in awkward positions such as stooping, crouching and kneeling;
- near visual acuity to set guides and stops of machine to close tolerances;
- adaptability to work while exposed to loud continuous noise.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;

B

- from three months to four years of related experience and on-the-job training, depending on the complexity of the occupation.
- eight to ten years of general education;
- up to one month of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Experienced workers in this cluster may advance to occupations within the cluster that are concerned with more complex machines. Those with supervisory potential may advance to 8250-118 FORMAN, PAPER-MAKING AND FINISHING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

B

Experienced workers in this cluster who acquire additional training may advance to occupations requiring higher skills in Cluster A.

Transfer

A and B

Transfer possibilities for workers in both clusters may be to other occupations requiring similar skills within the clusters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things under specific instruction, allowing little or no room for independent action or judgment in solving job problems;
- the precise attainment of set limits, tolerances or standards.

INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PULP AND PAPERMAKING

WORK PERFORMED

This chapter includes occupations concerned with quality control activities in pulp processing, pulpboard manufacturing and papermaking. Worker functions include: analyzing data obtained by examining and completing physical and chemical tests on pulp, paper and other materials; compiling information from specifications and results of production tests to ensure specified standards of quality are met; manipulating measuring devices and testing apparatus to establish characteristics such as freeness quality, acidity and conductivity of pulp stock, or brightness, colour, opacity and porosity of paper; working to precise tolerances when making measurements; and handling products or samples during inspection procedures. Work activities include: collecting samples for testing of product and monitoring production processes; examining pulpwood, wallboard and tiles to detect flaws or irregularities; sorting and grading rags used for papermaking; and sorting, verifying dimensions and counting paper sheets.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8256-110	LABORATORY TESTER (pulp & paper)	4	6	8256-114	PAPER TESTER (pulp & paper)	3	5
				8256-118	PULP TESTER (pulp & paper)	3	5

B

		GED	SVP			GED	SVP
8256-112	PAPER INSPECTOR (pulp & paper)	4	6	8256-122	INSPECTOR, PULP (pulp & paper)	3	5
				8256-126	INSPECTOR, SHEET PAPER (pulp & paper)	3	3

C

		GED	SVP			GED	SVP
8256-130	RAG CHECKER (pulp & paper)	2	2	8256-134	PAPER SORTER AND COUNTER (pulp & paper)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>2</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>3</u>	L 47	I 5	4-3	6-5	197 19	0Y1 0Y	
B	<u>3</u>	3	3	<u>4</u>	<u>3</u>	3	<u>4</u>	4	4	5	4	L-M 457	I	4-3	6-3	91	0Y9	
	<u>4</u>	4		<u>3</u>		4												
C	4	4	4	4	<u>3</u>	<u>4</u>	<u>3</u>	4	<u>4</u>	5	4	L 47	I	2	2	31	23	
					<u>4</u>		<u>4</u>											

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

— learning ability to acquire a knowledge of, and to carry out the

physical and chemical laboratory testing procedures for pulp and paper, and to write reports of findings;

— numerical ability to conduct quantitative tests, to calculate test results and to accurately report findings;

- spatial perception to visualize end product by laboratory testing of samples taken at various stages of production process;
- form perception to make visual comparisons during testing procedures, such as testing smoothness and porosity of paper;
- eye-hand-finger co-ordination and finger dexterity to handle minute product samples and to use precision laboratory instruments;
- manual dexterity to use industrial testing machines;
- colour discrimination to discern variations of colour in product or tests involving colour comparison or indications;
- capacity to handle precision instruments and to finger and feel objects and materials;
- near visual acuity to examine samples of product for variations from standards;
- adaptability to work while exposed to loud and noisy machinery.

B

- learning ability to recognize an acceptable standard for pulp processing, pulpboard manufacturing and papermaking, to relate test reports to the production process, and to relay corrective action required in process to achieve desired standards;
- spatial perception to visualize changes required in production process to achieve specified product;
- form perception to recognize visible deviations from standards such as tears, holes, wrinkles, slime or poor finish in paper being inspected;

- eye-hand co-ordination to handle product or samples of product during examination for defects;
- strength to perform light to medium work requiring the lifting of pulpboard panels weighing up to twenty pounds;
- ability to transmit oral instructions to other workers, clearly and concisely;
- near visual acuity and colour vision to inspect product and discern any defects or variations from standards.

C

- learning ability to understand and apply simple inspection instructions;
- form perception to detect variations in quality of process material and product from established standards;
- clerical ability to accurately record amounts, grades and weights of materials;
- eye-hand co-ordination to manipulate materials during weighing operations;
- manual dexterity to handle rags passing on conveyor belt for examination, and to sort and stack paper products;
- capacity to handle, finger and feel rags and paper to determine quality;
- near visual acuity and colour vision to examine materials for defects prior to processing and after production.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- twelve years of general education;
- one to two years of on-the-job training and related experience in a pulp and paper inspecting occupation.

B

- ten to twelve years of general education;

- three to eighteen months of on-the-job training and related experience in papermaking, depending on the complexity of the occupation.

C

- eight years of general education;
- on-the-job training ranging from a short demonstration to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Workers in this cluster with experience and supervisory potential may advance to 8250-112 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PULP AND PAPERMAKING. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

B

Workers in this cluster may advance to occupations in Cluster A.

C

Occupations in this cluster are considered entry jobs and advancement is normally to higher skilled occupations in this chapter for those workers who demonstrate ability, interest and initiative.

Transfer

A

Because of the specialized nature of the work, transfer possibilities for workers in this cluster are most likely to occupations, possibly as assistants, in other manufacturing laboratories.

B

Experienced workers in this cluster may transfer to other occupations requiring similar skills within the cluster.

C

Transfer for workers in this cluster may be to other occupations within the cluster, or to occupations requiring similar skills in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

A and B

- dealing with things and objects, such as industrial testing apparatus;
- non-social work, carried on in relation to processes, machines and techniques.

C

- routine, concrete and organized work;
- dealing with things and objects such as rags and sheets of paper.

Temperaments

A and B

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

Additionally, for Cluster B:

- the evaluation of information against sensory or judgmental criteria.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, PULP AND PAPERMAKING

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in the converting of cellulose materials into pulp, and making and finishing paperboard. Worker functions include: feeding raw materials such as rags, logs and waste paper onto conveyors and into hoppers of machines; and handling and sorting rags according to grade and colour. Work activities include: cutting clips, elastic and buttons from rags; collecting waste paper and pulp from machines for reprocessing; cleaning pulp logs; freeing jammed conveyors; and performing general clean-up duties.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8258-110	LABOURER, RAGS (pulp & paper)	2	2	8258-122	BROKE HUSTLER (pulp & paper)	1	2
8258-114	RAG-THRASHER-AND-CUTTER-MACHINE FEEDER (pulp & paper)	1	2	8258-126	CUTTERMAN, WET-MACHINE (pulp & paper)	1	2
8258-118	GRINDER FEEDER (pulp & paper)	1	2	8258-130	PULP-LOG RECLENER (pulp & paper)	1	2
				8258-134	SCREEN CLEANER (pulp & paper)	1	2

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5	M-H 34	I 56	2-1	2	31	23
	5					<u>3</u>		<u>3</u>	5	<u>4</u>		I 456				

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple instructions;
- eye-hand co-ordination and manual dexterity to use tools and work aids;
- eye-hand-foot co-ordination to move hand trucks or to climb and balance when working on machinery;
- strength to perform medium to heavy work requiring frequent lifting of objects weighing up to fifty pounds;
- agility to work in awkward positions, such as stooping and kneeling

while handling water hose and other equipment to clean machines and work areas;

- adaptability to working in the presence of noise from machinery.

Additionally, for 8258-110 LABOURER, RAGS:

- form perception to detect unwanted attachments such as buttons, clips and elastic which must be removed from rags before processing;
- colour discrimination to examine and segregate coloured rags.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specific educational level;
- one week to one month of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter with initiative and supervisory potential may advance to 8250-114 FOREMAN, LABOURERS AND ELEMENTAL WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Some experienced workers may also advance to occupations such as machine operator helpers found in other chapters; for example, Chapter 8251, CELLULOSE PULP PREPARING OCCUPATIONS.

Occupations in this chapter are considered as entry jobs, and advancement for workers who demonstrate ability is normally to higher skilled occupations.

Transfer

Transfer may be to other occupations requiring similar skills within the chapter, or to other labouring and elemental occupations found in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this cluster require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations, carried out according to set procedures or sequences;
- performing duties only under specific instruction, allowing little or no room for independent action or judgment in working out job problem.

PULP AND PAPERMAKING AND RELATED OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with making pulp and paper, and related products.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8259-110	WAD-COMPRESSOR OPERATOR (explosives)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I 5	3	4	91	0Y
8259-114	SLURRY MIXER (explosives)	3	4	3	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	4	5	M 24	I 4	3	3	91	0Y
8259-118	BALERMAN (pulp & paper)	4	4	4	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	4	5	M 4	I 5	2	3	319	23Y

TEXTILE FIBRE PREPARING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with preparing natural and synthetic fibres for further processing by washing, mixing, blending, picking, carding, lapping, combing, drawing and sizing. Worker functions include: operating or tending a variety of textile machines to prepare fibres for other processing operations such as spinning, winding and weaving; and comparing processed materials with established standards to detect defects. Work activities include: turning valves to fill vats; threading materials through machine guides; moving controls to start, stop and regulate operation of equipment; observing processing operations to detect machine malfunctions, yarn breaks or other defects; piecing or tying together broken threads or yarn; weighing processed materials; and cleaning machines.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8261-110	SLASHER OPERATOR (textile)	3	5	8261-114	WOOL SCOURER (textile)	3	4

B

		GED	SVP			GED	SVP
8261-118	COTTON-BALL-MACHINE TENDER (textile)	2	4	8261-158	SLUBBER TENDER (textile)	2	3
8261-122	PICKER TENDER (textile)	2	4	8261-162	STRETCHING-MACHINE TENDER (textile)	2	3
8261-126	STAPLE-PROCESSING-MACHINE TENDER (textile)	2	3	8261-166	WASTE-MACHINE TENDER (textile)	2	3
8261-130	BLENDING-MACHINE TENDER (textile)	2	3	8261-170	STOCK MIXER (textile)	2	2
8261-134	CARDING-MACHINE TENDER (asbestos & min. wool; textile)	2	3	8261-174	CHOPPING-MACHINE TENDER (syn. fibres)	2	2
8261-138	CARD STRIPPER (asbestos & min. wool; textile)	2	3	8261-178	CRIMPING-MACHINE TENDER (textile)	2	2
8261-142	DRAWING-MACHINE TENDER (textile)	2	3	8261-182	CRIMP SETTER (textile)	2	2
8261-146	FUR BLOWER (textile)	2	3	8261-186	WOOL OPENER AND DUSTER (textile)	2	2
8261-150	FUR MIXER (textile)	2	3	8261-190	YARN SOAKER (textile)	2	2
8261-154	SIZING-MACHINE TENDER (textile)	2	3	8261-194	BREAKER FEEDER (textile)	2	2
				8261-198	SLASHER-OPERATOR HELPER (textile)	2	2
				8261-202	STAPLE CUTTER (textile)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	4	4	<u>3</u> 4	<u>3</u> 5	4	<u>3</u> <u>4</u>	<u>3</u> 4	<u>3</u> <u>4</u>	4	5	M 34567	I 457	3	5-4	319	Y02
B	4	4	4	4	<u>4</u> 5	5	<u>4</u> 4	<u>3</u> 4	<u>3</u> <u>4</u>	5	5	L-M 347	I 57	2	4-2	913	2Y3

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability for 8261-110 SLASHER OPERATOR and 8261-114 WOOL SCOURER, to understand the functioning of equipment in order to operate and maintain machines; and for occupations in Cluster B, to tend machines or help operators, following simple instructions;
- form perception to examine rovings or yarn for differences in consistency, and uniformity in the blending and mixing of fibres;
- eye-hand-finger co-ordination and manual dexterity to thread materials through machine guides and unclog or clean machines;
- finger dexterity to join ends of broken slivers or threads rapidly and uniformly or to feel materials to determine its texture or dryness;
- sufficient strength to perform light to medium work requiring frequent lifting of items weighing up to twenty-five pounds and adaptability to continual standing and walking;
- agility to work around machinery in awkward positions, such as stooping, kneeling and crouching;

- near and far visual acuity and broad field of vision for observing many threads on machines for consistency or breaks and for uniformity when blending fibres;
- capacity to working while exposed to continuous loud noise from machines;
- adaptability to working in close proximity to moving mechanical parts and continual exposure to dust, lint or fluff.

Additionally,

Workers in Cluster A require:

- spatial perception to set up, operate and maintain slasher machine or scouring train;

8261-114 WOOL SCOURER requires:

- capacity to work while exposed to continual heat, humidity and dampness.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to ten years of general education;
- three to six months of on-the-job training;

- six months to one year of experience in related occupations requiring lesser skills.

B

- seven to nine years of general education;
- up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in Cluster B may advance to occupations requiring higher skills within the cluster. Those who acquire additional training may advance to occupations in Cluster A. Workers in both clusters who have supervisory potential may advance to 8260-114 FOREMAN, TEXTILE FIBRE PREPARING OCCUPATIONS. See also Chapter 990, FOREMAN OCCUPATIONS, for qualifications profile.

Transfer

Transfer for workers in this chapter may be to occupations requiring similar skills within the chapter. Possibilities for transfer may also be to other appropriate occupations in Minor Group 826/827, TEXTILE PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried on in relation to machines, processes and techniques;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

Additionally,

for Cluster A:

- the evaluation of information against measurable or verifiable criteria, such as determining tension of yarn using a tensiometer;

for Cluster B:

- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

TEXTILE SPINNING AND TWISTING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with spinning and twisting yarn, thread, twine or cordage to impart such characteristics as strength, bulk, texture and uniformity. Worker functions include: tending textile spinning and twisting machines; comparing materials produced with established standards to detect and rectify defects; and setting up and maintaining automatic machines that make fibre rope. Work activities include: installing and aligning dies and gears in rope-making machines; threading yarn, roving or sliver through machine guides; moving controls to start equipment; patrolling work area to detect yarn breaks and machine malfunctions; tying broken ends together; and removing full reels, bobbins or packages from machines.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP
8263-110	ROPE-MACHINE SET-UP MAN (textile)	3	6

B

		GED	SVP			GED	SVP
8263-114	COVERING-MACHINE TENDER (textile)	2	3	8263-126	TWISTER TENDER (asbestos & min. wool; textile)	2	3
8263-118	SPINNING-MACHINE TENDER (asbestos & min. wool; textile)	2	3	8263-130	YARN-TEXTURING-MACHINE TENDER (textile)	2	3
8263-122	STRAND-FORMING-MACHINE TENDER (textile)	2	3	8263-134	ROPE TWISTER (textile)	2	2
				8263-138	DOFFER (asbestos & min. wool; textile)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 34	I 567	3	6	91	0Y
B	4	4	4	4	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 347	I 57	2	3-2	319	23Y
			5		<u>4</u>	4	<u>4</u>			4	4						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand textile spinning and twisting machine operations and to apply techniques involved in setting up and tending equipment;
- spatial perception for 8263-110 ROPE-MACHINE SET-UP MAN to set up and maintain equipment;
- form perception to detect defects in twisting and in consistency of textile threads;
- eye-hand-finger co-ordination and manual dexterity to install and align gears and dies in machines, or make adjustments and thread yarn ends through machine guides;
- finger dexterity to tie broken ends of textile thread rapidly and neatly, or to turn setscrews to vary actions of rope machines;
- sufficient strength to perform light to medium work requiring frequent lifting of items weighing up to twenty five pounds;
- adaptability to long periods of standing and walking;
- agility to work around machinery in awkward positions such as stooping, kneeling and crouching;
- good vision, requiring both near and far acuity in a broad field of vision, to observe many threads on machines for size, uniformity and breaks;
- capacity to work while exposed to continual loud noise from machines;
- adaptability to working where allergy-producing dusts from yarn or thread may be present.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- | | |
|---|--|
| <p>A</p> <ul style="list-style-type: none"> — ten years of general education; | <p>B</p> <ul style="list-style-type: none"> — two years of on-the-job training. — eight to ten years of general education; — one to three months of on-the-job training. |
|---|--|

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Some workers in Cluster B may advance to other occupations requiring higher skills within the cluster. Workers in this chapter who have potential for supervision may advance to 8260-130 FOREMAN, TEXTILE SPINNING AND TWISTING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Although there are no established transfer patterns in the textile industry, some workers in Cluster B may transfer to other occupations within that cluster. With limited additional training, workers in this chapter may also transfer to appropriate occupations requiring similar basic skills in other chapters of Minor Group 826/827, TEXTILE PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- activities which are non-social in nature and are carried on in relation to textile machines and techniques;
- dealing with things and objects, such as knotter, knife and hand tools.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

- | |
|--|
| <p>A</p> <ul style="list-style-type: none"> — the evaluation of information against measurable or verifiable criteria; — the precise attainment of set limits, tolerances or standards. |
| <p>B</p> <ul style="list-style-type: none"> — repetitive or short cycle operations carried out according to set procedures or sequences; — doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems; — the precise attainment of set limits, tolerances or standards. |

TEXTILE WINDING AND REELING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with winding and reeling yarn, thread, rope, cloth and other textile products onto various forms such as beams, reels and bobbins. Worker functions include: tending or feeding winding or reeling machines; and comparing the characteristics of wound goods for defects to ensure acceptable standards are met. Work activities include: positioning full textile packages and empty take-up forms in machines; threading materials through tensioning devices and guides; moving controls to start and stop machines; observing operations to detect slubs, breaks or tangles; tying broken ends together; and doffing finished material from machines.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8265-110	RUG-SETTER (textile)	3	5	8265-146	SKEINER (textile)	2	2
8265-114	DRESSER (textile)	3	4	8265-150	SKEIN WINDER (textile)	2	2
8265-118	WARP TENDER, AUTOMATIC (asbestos & min. wool.; textile)	3	4	8265-154	SPLICING-MACHINE TENDER (textile)	2	2
8265-122	WARP BEAMER (textile)	3	3	8265-158	SPOOLER (textile)	2	2
8265-126	YARN-PLAITING-EQUIPMENT TENDER (textile)	2	3	8265-162	THREAD WINDER (textile)	2	2
8265-130	WARP-BEAMER HELPER (textile)	2	2	8265-166	YARN WINDER (syn. fibres; textile)	2	2
8265-134	LOOM-WINDER TENDER (textile)	2	2	8265-170	YARN WINDER, AUTOMATIC (textile)	2	2
8265-138	QUILLING-MACHINE TENDER, AUTOMATIC (textile)	2	2	8265-174	BATCHER (textile)	2	2
8265-142	ROVING WINDER, FIBERGLASS (syn. fibres)	2	2	8265-178	LINE SPOOLER (sport. & toy)	2	2
				8265-182	ROPE COILER (textile)	2	2
				8265-186	SCRAY MAN (knit goods; textile)	2	2

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	4	4	<u>3</u>	5	<u>4</u>	<u>3</u>	<u>3</u>	4	5	L-M 47	I 57	3-2	5-2	319	23Y
		5		<u>4</u>	4		<u>4</u>		5	4						23

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply instructions pertaining to textile winding and reeling operations;
- form perception to detect slubs, breaks, tangles or other defects during winding operations;
- eye-hand co-ordination to operate machine controls and to doff full packages of wound material;
- finger dexterity to thread yarn through machine guides and repair yarn breaks;
- manual dexterity and the ability to extend the hands and arms in any

direction in order to handle machine controls, doff packages and use scissors, gauges and tools;

- sufficient strength to perform light to medium work, requiring the lifting of boxes, cones, reels and bobbins weighing up to fifty pounds, and the pushing of trucks, beams and creels weighing up to six hundred pounds;
- adaptability to continuous standing and walking while observing machine operations;
- near visual acuity to thread material through machine guides and to detect breaks, tangles and other defects;
- capacity to work while exposed to loud machine noises, mechanical hazards and textile dust.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- seven to nine years of general education;

- one week to one year of on-the-job training and related experience, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

With additional training, some workers in this chapter may advance to more skilled occupations within the chapter or to other appropriate textile processing occupations in Minor Group 826/827, TEXTILE PROCESSING OCCUPATIONS. Those with potential for supervision may advance to 8260-138 FOREMAN, TEXTILE WINDING AND REELING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within the chapter or to other appropriate occupations in Minor Group 826/827, TEXTILE PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- dealing with things and objects such as beams, spools and hand tools;
- non-social work, carried on in relation to textile winding and reeling machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures as when loading and doffing spools, bobbins and other packages;
- working only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

TEXTILE WEAVING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with weaving plain or figured cloth, lace, carpet or other fabrics on hand or machine looms. Worker functions include: setting up looms to produce cloth with specified patterns or weave; operating or tending looms and related weaving equipment; manipulating and twisting warp ends together preparatory to weaving operations; and comparing quality of goods being woven to detect flaws in material or defective loom operation. Work activities include: preparing jacquard pattern chains; installing and adjusting gears, cams, shuttles and other components in machines; moving controls to start, stop and regulate equipment; examining woven products for defects; and repairing flaws and breaks in yarn.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8267-110	BRAID-PATTERN SET-UP MAN (textile)	4	7	8267-182	NEEDLE-LOOM OPERATOR (textile)	3	5
8267-114	LOOM-PATTERN CHANGER (textile)	4	7	8267-186	WEAVER, CARPET (textile)	3	5
8267-118	HARNESS PREPARER (textile)	3	6	8267-190	WEAVER, CLOTH (textile)	3	5
8267-122	HEDDLES TIER, JACQUARD LOOM (textile)	3	6	8267-194	WEAVER, JACQUARD-LOOM (textile)	3	5
8267-126	DRAWING-IN-MACHINE OPERATOR (textile)	3	5	8267-226	JACQUARD-CARD CUTTER (textile)	3	5
8267-130	PINNING-MACHINE OPERATOR (textile)	3	5	8267-134	HARNESS MAN (textile)	3	4
				8267-230	PATTERN PUNCHER (textile)	3	4

B

		GED	SVP			GED	SVP
8267-138	DRAWER-IN, LOOM (textile)	3	4	8267-150	LEASE MAN (textile)	2	3
8267-142	WARP-TYING-MACHINE TENDER (textile)	3	4	8267-154	WARP TIER-IN (textile)	2	3
8267-146	PATTERN CHANGER, JACQUARD LOOMS (textile)	2	4	8267-158	LEASING-MACHINE TENDER (textile)	2	3
8267-198	WEAVER, HAND (textile)	2	4	8267-206	BRAIDING-MACHINE TENDER (textile)	2	3
8267-202	AXMINSTER-CARPET WEAVER (textile)	2	4	8267-162	DRAWER-IN-LOOM HELPER (textile)	2	2
				8267-234	JACQUARD-CARD LACER (textile)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-M 347	I 57	4-3	7-4	91	Y0	
		3		<u>4</u>		5		<u>4</u>		4	5							
B	4	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-M 347	I 57	3-2	4-2	913	Y23	
	3		5		<u>4</u>	5	<u>4</u>	<u>4</u>	<u>4</u>		5							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand the principles and procedures of weaving, to apply this knowledge to the operation of weaving machines and looms and to understand pattern charts and oral or detailed written instructions;
- form perception to detect slight differences in cloth patterns which would indicate the need to replace worn cards in pattern chain, or possible machine malfunctions;
- eye-hand-finger co-ordination to make precise movements quickly and accurately to prevent or correct defective weaving, to set up and adjust weaving machines and to punch holes in loom pattern cards;
- finger dexterity to trace and quickly tie broken ends of yarn or thread using a weaver's knot, to join warp ends on loom beam to corresponding warp ends of loom harness and to set up and adjust weaving machines;
- manual dexterity to move the hands easily and skilfully to thread

materials through machines guides and to install components, such as gears, cams and shuttles in looms;

- sufficient strength to perform generally light to medium work requiring frequent lifting of items up to twenty five pounds, and continual standing and walking to observe machine operations;
- agility to work around machinery in awkward positions such as stooping, kneeling, crouching and crawling;
- near and far visual acuity with a broad field of vision to observe many threads on machines for breaks or weaving defects;
- colour vision to detect defects in coloured pattern weaving and to ensure the joining together of many coloured threads in their proper sequences.

Additionally, for Cluster A:

- spatial perception to set up weaving machines and looms according to pattern charts or customer specifications to produce cloth of specified size, style or pattern.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to ten years of general education;
- six months to two years of on-the-job training and related experience in less skilled weaving occupations;

- for the more complex occupations, textile courses at vocational schools may be available.

B

- seven to nine years of general education;
- up to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for workers in this chapter is normally to higher skilled occupations within their own cluster, or from Cluster B to A. Experienced workers with supervisory potential may advance to 8260-134 FOREMAN, TEXTILE WEAVING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their individual cluster. Some transfer possibilities may also be to appropriate occupations requiring similar basic skills and experience throughout Minor Group 826/827 TEXTILE PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects, such as harness frames, and assemblies and pattern chains.

Additionally, for Cluster B:

- routine, concrete and organized work, such as assisting in the preparation of warp for weaving.

Temperaments

A

- the precise attainment of set limits, tolerances or standards, such as observing the operation of automatic threading device to ensure that the drawing-in is according to pattern;
- the evaluation of information against measurable or verifiable criteria, to arrive at decisions, such as determining loom adjustments required to change weaving pattern.

B

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences, such as selecting warp ends according to colour and sequence on pattern chart;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

KNITTING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with knitting fabrics and articles such as lace, hosiery, sweaters and netting. Worker functions include: setting up, operating or tending one or more knitting machines; comparing quality of knitted goods to detect flaws in material or defective knitting machine operation; compiling information from work orders to determine machine set-up requirements; and manipulating yarn ends through machine needles and guides. Work activities include: building pattern chains and installing them in automatic knitting machines; positioning cones or spools of yarn on machine spindles; moving controls to start and stop equipment; examining knit goods for holes, runs, picks and other defects; tying ends of broken yarn together; and adjusting and repairing knitting machines.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8271-110	KNITTING-PATTERN SET-UP MAN (knit goods)	4	7	8271-114	KNITTING-MACHINE FIXER (knit goods)	4	6
				8271-118	LOOPER FIXER (knit goods)	4	6

B

		GED	SVP			GED	SVP
8271-122	LINKS-MACHINE KNITTER (knit goods)	3	5	8271-146	WARP-KNITTING-MACHINE TENDER (knit goods)	3	4
8271-126	HOSIERY-KNITTING-MACHINE TENDER (knit goods)	3	5	8271-150	KNITTER, FULL-FASHIONED GARMENT (knit goods)	2	4
8271-130	CROCHETER (knit goods)	3	4	8271-154	NET-KNITTING-MACHINE OPERATOR (knit goods; textile)	2	3
8271-134	LOOPER (knit goods)	3	4	8271-158	KNITTING-MACHINE TENDER (knit goods)	2	3
8271-138	SEAMLESS-HOSIERY KNITTER (knit goods)	3	4	8271-174	KNITTING-MACHINE-TENDER HELPER (knit goods)	2	2
8271-142	SURGICAL-PAD KNITTER (knit goods)	3	4				

C

		GED	SVP			GED	SVP
8271-162	THREADER (knit goods)	2	3	8271-166	CHAINMAN (knit goods)	2	2
				8271-170	TOPPER (knit goods)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4		M 3467	I 567	4	7-6	910	0Y
										5								
B	3	4	4	<u>4</u>	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	4	5		L-M 47	I 567	3-2	5-2	913	2Y0
	4			<u>4</u>	<u>4</u>		<u>4</u>	<u>4</u>		5	4							2Y3
C	4	4	5	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5		S-L 47	I 5	2	3-2	31	23Y
			4								4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand the principles of knitting machine operation, and carry out the setup and repair of the machines in accordance with well defined guidelines;
- spatial perception to visualize arrangement of pattern plates on chains to achieve correct machine operation for specified product and to determine adjustments or repairs required to correct defective knitting;
- form perception to make visual comparisons of slight differences in knitting pattern of sample to determine if knitting machines are set up correctly;
- eye-hand-finger co-ordination to set up and adjust knitting and looping machines;
- finger dexterity to adjust machine parts such as gears, cams and brakes and to replace and align worn, bent or broken looper points and needles;
- manual dexterity to repair or replace machine parts and to change gears that control automatic feeding mechanism;
- sufficient strength to perform medium work requiring frequent lifting of items weighing up to twenty pounds and frequent standing and walking to observe knitting or looping operations to verify machine setup;
- agility to work in awkward positions such as stooping, kneeling and crouching while setting up or repairing machines;
- physical ability to extend the hands and arms in any direction when setting up, repairing or adjusting machines and equipment;
- good hearing to listen to machine sounds and detect malfunctions;
- near and far visual acuity, to set up or repair machines and equipment and to synchronize action of needles and thread in the looping and sewing process;
- good colour vision to match yarn shades, when involved in colour-patterned knitting machinery;
- capacity to work while exposed to continual loud noise from knitting machinery;
- adaptability to conditions involving injury, such as cuts and bruises from moving parts of machines;
- adaptability to atmospheric conditions involving exposure to dusts and lint.

B

- learning ability to understand the principles of knitting and the operation of knitting machines and related equipment;
- spatial perception to set machine controls to achieve desired product and to make the necessary adjustments during operations to ensure proper quality of product;

- form perception to detect slight differences in knitting pattern which would determine need for machine adjustments;
- eye-hand-finger co-ordination to make precise movements quickly and accurately to prevent defective knitting or looping;
- finger dexterity to thread ends of yarn through machine guides, tension devices and needle guides and to tie broken ends of yarn together;
- manual dexterity to install spools on machine and to replace defective needles, using hand tools;
- sufficient strength to perform generally light to medium work requiring frequent lifting of items weighing up to twenty pounds with the occasional lifting of fifty pounds and frequent standing and walking to observe machine operations;
- physical ability to extend the hands and arms in any direction when adjusting machines and equipment and threading yarn through machine guides;
- near and far visual acuity to observe machine operations for malfunction or breaks in yarn, to tie ends of yarn together or to thread yarn through machine guides;
- colour vision to match yarn shades when observing colour-patterned knitting for defects;
- capacity to work while exposed to continual loud noise from knitting machinery;
- adaptability to conditions involving physical hazards such as injury from moving parts of machines and to atmospheric conditions involving exposure to dusts and lint.

C

- learning ability to understand the principles of knitting and to understand and follow detailed but uninvolved written or oral instructions;
- form perception to sort garment parts according to size, to select pattern-chain links according to pattern diagram and to turn spools or bobbins to align yarn ends;
- eye-hand-finger co-ordination to insert connecting pins through holes in links to form pattern chain to loop stitches of knitted garment parts on joints of transfer bar and to draw yarn through open hooks of needles or guides;
- manual dexterity to tie thread ends in bunches to facilitate handling to separate garment parts and to mark links according to sequence in chain, using square and scriber;
- physical capacity to move the hands and arms when threading yarn through needles of machines, assembling pattern chains and sorting garment parts;
- good vision to align yarn ends, to mark pattern-chain links according to sequence in chain, and to loop stitches of knitted garment parts or joints of transfer bar;
- capacity to work while exposed to continual loud noise from knitting machinery.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten or eleven years of general education;
- a three year vocational course in textiles and three months of on-the-job training; or
- one to two years of related experience in lesser skilled occupations and from three months to one year of on-the-job training.

B

- eight to nine years of general education;
- up to one year of on-the-job training.

C

- eight years of general education;
- up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Some workers in Cluster C may advance to occupations in Cluster B requiring higher skill levels. Experienced workers in Cluster B who receive additional training may advance to occupations in Cluster A. Those with supervisory potential may advance to 8260-126 FOREMAN, KNITTING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities for workers in this chapter are limited, but may be to other occupations requiring similar skills within the individual clusters, or in Minor Group 826/827 TEXTILE PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- activities that are non-social in nature and are carried on in relation to knitting processes, machines and techniques;
- dealing with things and objects;
- activities leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as setting up knitting machines according to specifications;
- the precise attainment of set limits, tolerances or standards.

B

Interests

- activities that are non-social in nature and are carried on in relation to knitting processes, machines and techniques;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

C

Interests

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

TEXTILE BLEACHING AND DYEING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with bleaching and dyeing cloth, thread, yarn or other textile products. Worker functions include: tending a variety of textile dyeing, bleaching and washing equipment; working to precise standards when preparing dye formulas to produce specified colours; comparing materials from each finished lot to standards to detect colour variations; and co-ordinating production schedules in dyeing department to ensure efficient operations. Work activities include: loading and unloading equipment with materials to be dyed, bleached, washed or finished; mixing dyes, cleaning agents or finishing chemicals according to specifications; setting temperature or timing devices; and turning valves to fill or drain tanks.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8273-110 MASTER DYER (knit goods; textile)

5 7

B

GED SVP

8273-114 DYE-RANGE OPERATOR (textile)

3 5

8273-118 DYE-TUB TENDER
(garment & fabric; knit goods)

2 4

8273-122 BLEACHER (knit goods; textile)

2 3

8273-126 CLOTH DYER (textile)

2 3

8273-130 KIER-BOILER TENDER (textile)

2 3

8273-134 RAW-STOCK DYER (textile)

2 3

8273-138 SINGEING-AND-BOILING-
MACHINE TENDER (textile)

2 3

8273-142 TEXTILE WASHER
(knit goods; textile)

2 3

8273-146 YARN DYER (textile)

2 2

8273-150 RINSER (knit goods; textile)

2 2

8273-154 TWINE DYER (textile)

2 2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	<u>3</u>	4	3	3	4	4	4	5	<u>1</u>	L 47	I	5	7	791	Y904
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	4	L-M 47	I 347 I 4	3-2	5-2	931	2Y 2Y3
			5			5				5	<u>3</u>						

APTITUDES AND CAPACITIES

Workers in this chapter require:

Master Dyers

- learning ability to understand the principles of dyeing textile materials and the operation of dyeing equipment, the preparation of dye formulas to specifications and the developing of new colours and dyes;
- numerical ability to make calculations of amount of dyestuffs and materials needed for each order and to prepare requisitions accordingly, and to calculate changes in quantities of dye ingredients to adjust colour formulas to produce required properties and shade;
- colour discrimination to a high degree to match customer or plant colour samples to standard colour charts, and to select correct formulas or to make adjustments to the selected formula to match sample;
- sufficient strength to perform generally light work requiring frequent

lifting of items weighing up to ten pounds and frequent standing and walking to observe that dyeing processes conform to production requirements;

- physical ability to extend the hands and arms in any direction while mixing dye ingredients or working around dyeing equipment;
- good vision, both near and far acuity, to observe materials in process, to read gauges and thermometers to determine required adjustments and to ensure conformance to standards.

Workers in Cluster B:

- learning ability to understand the principles of dyeing textile materials, the operation of dyeing equipment and the correct interpretation of oral and written instructions;
- form perception to make visual comparisons of slight differences in finishes which would indicate the need to alter formulas;
- eye-hand-finger co-ordination to make precise movements quickly

- and accurately to prevent defective dyeing or bleaching, by turning valves or moving levers to control the flow of solutions or materials;
- manual dexterity to sew cloth ends to lead cloth in dyeing machine to form continuous length and to feed and remove materials from equipment;
- colour discrimination required to a significant degree in the following occupations: 8273-118 DYE-TUB TENDER, 8273-126 CLOTH DYER and 8273-146 YARN DYER to ensure conformance to standards;
- sufficient strength to perform generally light to medium work requiring frequent lifting of items weighing up to twenty five pounds

- and continual standing and walking to observe equipment operations to detect improper dyeing, bleaching, washing or singeing;
- physical ability to extend the hands and arms in any direction while mixing dye ingredients or working around dyeing equipment;
- good vision, both near and far acuity, to observe materials in process, and to read gauges and thermometers to determine required adjustments to ensure conformance to standards;
- capacity to work while exposed to continual heat and humidity from steam and hot water involved in the dyeing, bleaching and washing operations;
- adaptability to physical hazards and atmospheric conditions involving burns from steam and hot water and continual exposure to fumes and odours.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- eleven to twelve years of general education;
- two years of experience in other occupations concerned with dyeing

textiles and up to one year of on-the-job training under the guidance of a master dyer.

B

- eight to nine years of general education;
- up to one year of on-the-job training, depending on the complexity of the process involved.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in Cluster B may advance to occupations requiring higher skills within that cluster. Those who acquire additional training may also advance to 8273-110 MASTER DYER. Experienced workers with supervisory potential may advance to 8260-110 FOREMAN, TEXTILE BLEACHING AND DYEING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities are limited, however, because of similarity of skills some workers may transfer to occupations in Minor Group 616, APPAREL AND FURNISHINGS SERVICE OCCUPATIONS, such as 6161-110 WASHING-MACHINE TENDER or 6169-110 DYER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- activities of a scientific and technical nature, such as developing new colours and dyes;
- activities which are non-social in nature and are carried on in relation to processes, machines and techniques, such as preparing dye formulas to conform with customer and plant specifications;
- dealing with things and objects, such as dyestuffs, formula sheets and laboratory equipment.

Temperaments

- the precise attainment of set limits, tolerances or standards, such as selecting formula sheet which corresponds with standard colour chart;
- the evaluation of information against sensory or judgmental criteria and measurable and verifiable criteria to arrive at decisions, such as matching samples to standard colour charts;
- the direction, control and planning of an entire activity or the activities of others, such as production scheduling.

B

Interests

- activities which are non-social in nature and are carried on in relation to processes, machines and techniques, such as operating and tending bleaching and dyeing machines and equipment;
- activities of a routine, concrete and organized nature, such as soaking, pre-shrinking and rinsing cloth prior to dyeing or finishing;
- dealing with things and objects, such as textile fibres, yarn, cloth or knit goods.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences, such as dyeing or bleaching skeins of yarn;
- the precise attainment of set limits, tolerances or standards, such as examining materials from each dye or finish lot and comparing them to standards.

TEXTILE FINISHING AND CALENDERING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with calendering, shrinking, stretching, drying, aging, coating or otherwise finishing textiles. Worker functions include: operating or tending a variety of textile finishing machines and equipment; and comparing characteristics of cloth, yarn, felt, impregnated fabric or other finished products to specified standards. Work activities include: threading fabric through machine rollers; sewing ends of fabric together to form continuous lengths; turning valves to admit finishing solutions; moving controls to set or adjust temperature, tension, and speed of materials passing through equipment; removing processed materials; and making minor adjustments and repairs to machines.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8275-110	FIXER, BOARDING ROOM (knit goods)	4	6	8275-118	FINISHING-MACHINE OPERATOR (knit goods; textile)	3	4
8275-114	COATING-MACHINE OPERATOR (textile)	3	5	8275-122	PILE-FABRIC FINISHER (textile)	3	4

B

		GED	SVP			GED	SVP
8275-126	AUTOCLAVE TENDER (textile)	3	3	8275-210	DRYING-MACHINE TENDER, YARN (textile)	2	2
8275-130	YARN CONDITIONER (textile)	2	3	8275-214	EMBOSSING-CALENDER TENDER (textile)	2	2
8275-134	AGER TENDER (textile)	2	3	8275-218	EXTRACTOR-MACHINE TENDER (knit goods; textile)	2	2
8275-138	CALENDER-MACHINE TENDER (asbestos & min. wool; textile)	2	3	8275-222	FELT DRIER (textile)	2	2
8275-142	CAN TENDER (textile)	2	3	8275-226	PILE-FINISHING-MACHINE TENDER (textile)	2	2
8275-146	CARBONIZER TENDER (textile)	2	3	8275-230	PLEATER (knit goods; textile)	2	2
8275-150	CARPET-DRYING-MACHINE TENDER (textile)	2	3	8275-234	RAW-STOCK DRIER (textile)	2	2
8275-154	CLOTH SHRINKER (knit goods; textile)	2	3	8275-238	SHEARING-MACHINE TENDER (textile)	2	2
8275-158	DRYING-MACHINE TENDER (garment & fabric; knit goods; textile)	2	3	8275-242	SPRAY-COATING-MACHINE TENDER (textile)	2	2
8275-162	FULLER (textile)	2	3	8275-246	STRETCHING-MACHINE TENDER (knit goods)	2	2
8275-166	MERCERIZER (textile)	2	3	8275-248	TENSION-DRYING-MACHINE TENDER (textile)	2	2
8275-170	NAPPER TENDER (knit goods; syn. fibres; textile)	2	3	8275-250	TENTER-MACHINE TENDER (knit goods; textile)	2	2
8275-174	SPRAYING-MACHINE TENDER (textile)	2	3	8275-254	TEXTURING-MACHINE TENDER (syn. fibres; textile)	2	2
8275-178	STEAMER TENDER (textile)	2	3	8275-258	TUMBLER TENDER (knit goods; textile)	2	2
8275-182	TAR-MACHINE TENDER (textile)	2	3	8275-262	WEFT STRAIGHTENER (textile)	2	2
8275-186	YARN MERCERIZER (textile)	2	3	8275-266	WRINGER TENDER (leather tan. & fur dress.; textile)	2	2
8275-190	BOARDER (knit goods)	2	2	8275-270	YARN DRIER (textile)	2	2
8275-194	BREAKER TENDER (textile)	2	2	8275-274	YARN FINISHER (textile)	2	2
8275-198	CONTINUOUS-PRESS TENDER (textile)	2	2				
8275-202	CRABBING-MACHINE TENDER (textile)	2	2				
8275-206	DECATING-MACHINE TENDER (garment & fabric; knit goods; textile)	2	2				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u> <u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	4		L-M 47	I 5	4-3	6-4	91	0Y
B	4	4	4	4	<u>4</u> <u>3</u>	5	<u>4</u>	4	<u>3</u> <u>4</u>	4	5		L-M 47	I 5	3-2	3-2	913	Y230 Y23

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply a variety of oral and written instructions in order to operate and tend textile finishing machines;
- form perception to make visual comparisons of slight differences in coating solutions applied on textile materials;
- eye-hand-finger co-ordination to turn valves and move levers to regulate or synchronize the movement of materials through machines;
- manual dexterity to move the hands easily and skilfully when installing machine components;
- sufficient strength to perform generally light to medium work and to continually stand and walk to observe machine operations;
- physical ability to extend the hands and arms in any direction while

working around machines, and to feel finished materials to determine that texture or dryness complies with known standards;

- good vision, requiring both near and far acuity, to observe materials for defects in finish;
- adaptability to work while exposed to continual loud noise from finishing machines and equipment.

Workers in Cluster A also require:

- spatial perception to visualize the finished product, and to observe the operation of machines in order to detect malfunctions or need for adjustment;
- finger dexterity to replace worn or broken machine parts, or to thread and align materials through and around rollers and machine guides.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to ten years of general education;

- three months to one year of on-the-job training and related experience in a textile finishing department.

B

- seven to nine years of general education;
- up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in these clusters may advance to higher skilled occupations within their individual cluster, or from Cluster B to A. Some workers may advance to 8276-130 FABRIC INSPECTOR, and those with supervisory potential to 8260-118 FOREMAN, TEXTILE FINISHING AND CALENDERING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their cluster. Other transfer possibilities may be to occupations in other chapters, for example, 8273-142 TEXTILE WASHER, 8279-126 CLOTH-PROCESSING-RANGE TENDER, and 8173-146 SPREADER MAN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- activities that are non-social in nature and are carried on in relation to textile finishing processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments**A**

- the evaluation of information against measurable or verifiable criteria to arrive at decisions, such as measuring and mixing ingredients according to formula;
- the precise attainment of set limits, tolerances or standards.

B

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences, such as drying and rewinding fabric preparatory to further processing;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, TEXTILE PROCESSING

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in textile processing. Worker functions include: comparing characteristics or composition of textile materials and products to specified standards; handling fabric goods, scales, rules, magnifiers and inspection devices; and compiling and recording inspection or test results. Work activities include: inspecting cloth, narrow fabrics, yarn, hosiery or carpets for weaving or finishing defects; performing physical or chemical tests on samples to determine colour fastness, shrinkage, tensile strength and other characteristics; collecting and labelling samples; and grading textiles according to colour, size and quality.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8276-110	TEXTILE TESTER (textile)	3	6	8276-154	WARP-TENSION TESTER (textile)	3	3
8276-114	SWATCH CHECKER (textile)	3	6	8276-158	INSPECTOR, TRIMMING MATERIAL (textile)	2	3
8276-118	WOOL-FLEECE-SORTER-AND-GRADER (textile)	3	6	8276-162	KNITTED-FABRIC INSPECTOR (knit goods)	2	3
8276-122	CLOTH GRADER (textile)	3	5	8276-166	STOCKING INSPECTOR (knit goods)	2	3
8276-126	QUALITY-CONTROL TESTER (knit goods)	3	4	8276-170	SAMPLE MAN (textile)	2	3
8276-130	FABRIC INSPECTOR (textile)	3	4	8276-174	SHADE MATCHER (textile)	2	3
8276-134	PRE-SHRINKING PROCESS TESTER (textile)	3	3	8276-178	SKEIN-YARN EXAMINER (textile)	2	3
8276-138	ROVING-WEIGHT GAUGER (textile)	3	3	8276-182	YARN INSPECTOR (syn. fibres; textile)	2	3
8276-142	WEAVING INSPECTOR (textile)	2	4	8276-186	CLOTH SORTER (textile)	2	2
8276-146	HOSIERY PAIRER (knit goods)	2	4	8276-190	GREIGE-CLOTH EXAMINER (textile)	2	2
8276-150	INSPECTOR, TEXTILE PRODUCTS (textile)	2	4	8276-194	NARROW-FABRICS EXAMINER (textile)	2	2

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	<u>3</u>	L 47	I 5	3-2	6-2	139	0Y29
<u>3</u>				<u>2</u>			<u>3</u>	<u>3</u>		<u>4</u>						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and carry out testing, inspecting, grading and sampling procedures for wool, woven cloth, fabrics, yarn and fibres, hosiery and other textiles, to ensure conformance to standard specifications, which are normally plant quality standards;
- form perception to note slight differences in weaving, style or thickness of yarn, to examine hosiery for defects in knitting, seaming, looping or dyeing and fabrics for grease spots, slubs, mispicks, uneven selvages and irregularities in colour, which would indicate the need to adjust machines or equipment, to correct defects or reclassify grades of materials or products;
- eye-hand-finger co-ordination and finger dexterity to manipulate

textile samples while inspecting them for defects or when subjecting the samples to quality-control tests;

- manual dexterity to operate a variety of testing and inspection machines such as stretch-flex machines, stitch-counting machines and break testers, to position textile materials on inspection equipment and to feed or remove samples from test equipment and fixtures;
- colour discrimination to distinguish differences in shades and colours of printed or woven materials from standards or to match materials by colours;
- sufficient strength to perform generally light work requiring frequent

- lifting of items up to fifteen pounds and frequent standing and walking;
- physical ability to extend the hands and arms in any direction when positioning materials for inspection, placing textile samples in or on test equipment or matching materials by colour or type;

- near and far visual acuity to inspect materials or products for defects, count number of threads per inch in fabric, and to read gauges and markings on test equipment or instruments;
- capacity to work while exposed to continual loud noise from textile machinery.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- nine to ten years of general education;

- on-the-job training ranging from a short demonstration up to two years, with varying periods of related experience necessary for some occupations.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to occupations within this chapter that require higher levels of skills. Some workers who qualify through additional training or vocational courses may advance to 2117-268 TEXTILE TECHNICIAN. Those who have supervisory potential may advance to 8260-122 FOREMAN, TEXTILE INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS. See also chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations within this chapter that require similar skills, or to some occupations in other chapters such as Chapter 8176, INSPECTING, TESTING AND SAMPLING OCCUPATIONS: CHEMICAL, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING, where only short training periods may be required.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- activities of a routine, concrete and organized nature;
- activities which are non-social in nature and are carried on in relation to machines, processes and techniques.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences;
- the evaluation of information against sensory or judgmental criteria.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, TEXTILE PROCESSING

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in the processing of textile fibres into yarn or thread, and the weaving, knitting, dyeing and finishing of fabrics. Worker functions include: feeding materials into spinning, weaving, dyeing, washing or similar processing machines; and handling rolls of cloth, bobbins, shuttles, yarn, dyes and other textile-processing supplies. Work activities include: transporting materials between workers or departments; stripping and polishing bobbins for further use; salvaging yarn and cloth for reuse; and cleaning machines and work areas.

LIST OF OCCUPATIONAL TITLES

		GED SVP				GED SVP	
8278-110	CLOTH FEEDER (knit goods; textile)	1	2	8278-154	CLOTH FRAMER (textile)	1	2
8278-114	CLOTH TURNER (knit goods)	1	2	8278-158	CREELER (textile)	1	2
8278-118	DYE-HOUSE HELPER (knit goods; textile)	1	2	8278-162	PICK REMOVER (textile)	1	2
8278-122	LABOURER, WOLLEN MILL (textile)	1	2	8278-166	RAG-SORTER-AND-CUTTER (textile)	1	2
8278-126	ROLL-MAT-MACHINE FEEDER (textile)	1	2	8278-170	SKEINER, HAND (textile)	1	2
8278-130	TRAY DRIER (knit goods)	1	2	8278-174	TEXTILE-MACHINE CLEANER (textile)	1	2
8278-134	UTILITY MAN, FELT GOODS (textile)	1	2	8278-178	TRAVELLER CHANGER (textile)	1	2
8278-138	WASTE-MACHINE FEEDER (textile)	1	2	8278-182	CLIPPER, MACHINE (knit goods)	1	1
8278-142	YARN SALVAGER (textile)	1	2	8278-186	CAN DOFFER (textile)	1	1
8278-146	YARN STRIPPER (textile)	1	2	8278-190	KAPOK BLOWER (textile)	1	1
8278-150	BOBBIN PROCESSOR (syn. fibres; textile)	1	2	8278-194	SHUTTLE FILLER (textile)	1	1
				8278-198	ROLLER CLEANER (textile)	1	1

QUALIFICATIONS PROFILE

Aptitudes										PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C					
4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	L-M 4	I 57	1	2-1	13
	5						<u>3</u>	<u>3</u>	5	4					23

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and carry out simple oral or written instructions to feed, doff and help in operating textile processing machines, and to write identifying information such as weight, number or type of textile material on tags or slips;
- form perception to carry out basic tasks, such as examining yarn for surface defects, unravelling portion of fibreglass sliver to verify location of end, trimming false selvage from edge of cloth and scanning wool rags for hardware such as buttons and snaps;
- eye-hand co-ordination to offbear material from textile machines and equipment;
- finger dexterity to replace or change travellers on ring-spinning

frames and to thread yarn through guides or tie broken ends of yarn together;

- manual dexterity to move hands and arms easily and skilfully when cleaning and oiling textile processing machines and equipment or when loading and unloading material-handling conveyances used to transport materials and supplies between work areas;
- physical fitness and sufficient strength to perform light to medium work requiring frequent lifting of items weighing up to twenty pounds and the occasional lifting of fifty to sixty pounds;
- capacity for continual standing and walking to monitor textile processing equipment;
- capacity to work while exposed to continual loud noise from textile processing machines and equipment, and in an atmosphere containing dusts, lint and fluff.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- six to eight years of general education;
- on-the-job training ranging from a short demonstration up to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter are employed primarily in entry occupations and they normally advance to higher skilled work in Minor Group 826/827, TEXTILE PROCESSING OCCUPATIONS.

Transfer

Transfer possibilities for workers in this chapter are limited, but may be to other occupations requiring similar skills within the chapter, or in Minor Group 826/827 TEXTILE PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- dealing with things and objects, such as textile materials and supplies;
- routine, concrete and organized work, such as feeding and offbearing materials from textile machines and equipment.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences, such as sorting and cutting reclaimable textile stock;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

TEXTILE PROCESSING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with operating, tending and feeding textile processing machines, and offbearing cloth from machines.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
8279-110	PADDING-MACHINE OPERATOR (textile)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 347	I 56	3	5	91	0Y
8279-114	FELT-MAKING-MACHINE OPERATOR (textile)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 2347	I 5	3	5	91	0Y
8279-118	TUFTING-MACHINE OPERATOR (textile)	3	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	4	L 47	I 5	3	4	91	2Y
8279-122	FIBRE-EXTRUDING-MACHINE TENDER (syn. fibres)	4	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	4	L 47	I 5	3	4	91	2Y
8279-126	CLOTH-PROCESSING-RANGE TENDER (textile)	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 4	2	4	91	2Y
8279-130	YARN STOREKEEPER (textile)	4	4	4	4	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>4</u>	4	3	M 47	I 5	2	3	13	23Y
8279-132	GLASS-FIBRE-BONDING-MACHINE TENDER (syn. fibres)	4	4	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>4</u>	4	5	L 4	I	2	3	319	23Y
8279-134	BONDING-MACHINE TENDER (textile)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 47	I	2	3	319	23Y
8279-138	FELTING-MACHINE TENDER (textile)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 47	I	2	3	319	23Y
8279-142	FLOCKING-MACHINE TENDER (textile)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 47	I	2	3	319	23Y
8279-146	PAD-EXTRACTOR TENDER (knit goods; textile)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	L 47	I	2	3	319	23Y
8279-150	PRESSER-AND-THREADER (textile)	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 5	2	3	319	23Y
8279-154	BATTING-MACHINE TENDER (textile)	4	4	4	<u>4</u>	4	4	<u>4</u>	4	<u>3</u>	4	5	M 47	I 5	2	2	319	23Y
8279-158	CLOTH-MEASURING-MACHINE TENDER (textile)	4	4	4	4	4	4	<u>4</u>	4	<u>4</u>	4	5	H 47	I	2	2	319	23Y
8279-162	FOLDING-MACHINE TENDER (textile)	4	4	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	4	5	M 47	I	2	2	319	23Y
8279-166	TAPE-FOLDING-MACHINE TENDER (textile)	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	4	L 47	I	2	2	319	23Y
8279-170	TUBING FOLDER (knit goods)	4	4	4	<u>4</u>	4	4	<u>4</u>	4	<u>3</u>	4	5	M 47	I	2	2	319	23Y
8279-174	CLOTH FOLDER, HAND (garment & fabric; textile)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	4	L 47	I	2	2	31	23
8279-178	PICK-PULLING-MACHINE TENDER (textile)	4	4	5	<u>4</u>	4	5	<u>4</u>	<u>4</u>	<u>4</u>	4	5	M 47	I	2	2	319	23Y
8279-182	BALL-FRIDGE-MACHINE TENDER (textile)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	319	23
8279-186	BRUSH-MACHINE TENDER (textile)	4	4	4	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	4	5	M 4	I 5	2	2	319	23
8279-190	CLIPPING-MACHINE TENDER (textile)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	319	23
8279-194	FELT-PRESS-MACHINE TENDER (textile)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	L 4	I	2	2	319	23Y
8279-198	SAMPLE STEAMER (textile)	4	4	4	4	4	5	<u>4</u>	4	<u>4</u>	5	<u>4</u>	L 47	I 4	2	2	319	23Y
8279-202	SCUTCHER TENDER (knit goods; textile)	4	4	4	<u>4</u>	4	5	<u>4</u>	<u>4</u>	<u>4</u>	4	5	M 47	I 5	2	2	319	23
8279-206	TASSEL-MACHINE TENDER (textile)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 4	I	2	2	319	23
8279-210	WINDING-MACHINE TENDER (textile)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	4	M 4	I 5	2	2	319	23Y
8279-214	CLOTH OFFBEARER (knit goods; textile)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 47	I 5	2	2	31	23

TOBACCO PROCESSING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with processing tobacco and making cigars, cigarettes and other tobacco products. Workers functions include: tending tobacco processing equipment and machines that blend, treat, moisten, destem, strip, cut or shred tobacco leaves and produce cigars, cigarettes and plugs or twists of smoking or chewing tobacco; and manipulating tobacco leaves to handform cigars or twists of chewing tobacco. Work activities include: selecting and mixing various types and grades of tobacco to produce specified blends; observing operations of machines and equipment to ensure processing according to specifications; turning dials or valves and moving levers to set or adjust temperature, speed, tension or pressure of processing equipment; rolling cigars by hand; and weighing tobacco products.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
	<i>Tobacco Preparing Occupations</i>			8293-142	TOBACCO-CUTTING-MACHINE TENDER (tobacco)	2	2
8293-110	TOBACCO BLENDER (tobacco)	3	3		<i>Tobacco Products Manufacturing Occupations</i>		
8293-114	BLENDING-LINE ATTENDANT (tobacco)	2	3	8293-162	CIGAR-MAKER, HAND (tobacco)	2	5
8293-118	CASING COOKER (tobacco)	2	3	8293-164	CIGARETTE-MACHINE TENDER (tobacco)	2	4
8293-122	CASING-MACHINE TENDER (tobacco)	2	3	8293-166	CIGAR MAKER, MACHINE (tobacco)	2	4
8293-126	TOBACCO-CONDITIONER TENDER (tobacco)	2	3	8293-170	PATCH WORKER (tobacco)	2	3
8293-130	DRYER TENDER (tobacco)	2	2	8293-174	TWISTER, HAND (tobacco)	2	3
8293-134	STEM-FLATTENING-MACHINE TENDER (tobacco)	2	2	8293-178	PLUG-CUTTING-MACHINE TENDER (tobacco)	2	2
8293-138	STRIPPING-MACHINE TENDER (tobacco)	2	2	8293-182	PLUG-MOULDER, MACHINE (tobacco)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L-M 47	I 5	3-2	5-2	913		2Y
		4		<u>3</u>	4			<u>4</u>	4	<u>3</u>							23Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply a variety of written and oral, detailed but uninvolved, instructions to operate tobacco processing machines and equipment and to recognize essential tobacco characteristics;
- form perception to make visual comparisons of slight differences in texture when blending tobacco, and variations in size or shape of tobacco products;
- eye-finger co-ordination to turn dials or valves and to move levers to control machine operations;
- manual dexterity to move the hands easily and skillfully when positioning cigar wrapper leaf over die of machine to obtain maximum product from each leaf, when loading and unloading machines and when making cigars by hand;
- colour discrimination to a significant degree by 8293-110 TOBACCO BLENDER to sort tobacco into types according to the colour or shade of the leaf;

- physical fitness and sufficient strength to perform generally light to medium work requiring frequent lifting of items weighing up to twenty five pounds with the occasional lifting of fifty pounds and frequent standing and walking to observe machine operations;
- physical ability to extend the hands and arms in any direction when adjusting machines and equipment and to feel tobacco leaves to determine that moisture content is sufficient to permit the handling of the leaves without damage;
- near visual acuity while sorting and grading tobacco or while examining and repairing damaged or defective cigars;
- capacity to work while exposed to continual loud noise from tobacco processing machines and related equipment;
- adaptability to working where strong tobacco odours are present.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- seven to nine years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers with supervisory potential may advance to 8290-118 FOREMAN, TOBACCO PROCESSING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfers may be to other occupations requiring similar skills within this chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities that are non-social in nature and are carried on in relation to processes, machines and techniques, such as tending conveyors and machines to blend tobacco;
- dealing with things and objects;
- activities of a routine, concrete and organized nature, such as feeding tobacco leaves between feed rollers of stripping machine.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences, such as making cigars by hand;
- the precise attainment of set limits, tolerances or standards, such as measuring, weighing and dumping solid and liquid ingredients into vat, following standard formula.

OTHER REQUIREMENTS

A willingness to accept shift work is a desirable factor sought by employers in this industry.

HIDE AND PELT PROCESSING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with processing hides, pelts and skins to make leather stock and finished furs. Worker functions include: tending machines or equipment to tan and process articles; and manipulating knives, brushes and scrapers. Work activities include: moving controls to start and stop machines; trimming or scraping undesirable portions from hides; treating hides and skins in chemical solutions to cure, unhair, pickle, dye, oil or tan them; stretching, softening and dressing pelts; buffing leather; plucking and shearing fur; and examining finished products for defects.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8295-110	SPLITTER (leather tan. & fur dress.)	3	4	8295-134	SHAVING-MACHINE TENDER (leather tan. & fur dress.)	2	3
8295-114	HIDE AND SKIN PREPARER (leather tan. & fur dress.)	2	4	8295-136	FUR BLENDER (leather tan. & fur dress.)	2	2
8295-118	PELT DRESSER (leather tan. & fur dress.)	2	4	8295-138	MEASURING-MACHINE TENDER (leather tan. & fur dress.)	2	2
8295-122	FLESHER, HAND (leather tan. & fur dress.)	2	3	8295-142	BUFFER, LEATHER (leather tan. & fur dress.)	2	2
8295-124	FUR PLUCKER (leather tan. & fur dress.)	2	3	8295-146	PELT STRETCHER (leather tan. & fur dress.)	2	2
8295-126	FUR-FLOOR WORKER (leather tan. & fur dress.)	2	3	8295-150	WOOL PULLER (leather tan. & fur dress.)	2	2
8295-130	LEATHER STRETCHER (leather tan. & fur dress.)	2	3				

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	4	4	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L-M 47	I 67	3-2	4-2	193	20Y
		5		<u>4</u>	4	<u>4</u>	<u>3</u>		4	<u>3</u>						23Y
										4						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply work instructions pertaining to hide and pelt processing;
- form perception to examine hides and skins for cuts, blemishes, tears and other defects;
- eye-hand co-ordination to position and guide hides and skins through various processing machines;
- finger dexterity to perform such activities as pulling wool from sheep pelts, and applying tints and dyes to tips of guard hairs, using brush;
- manual dexterity, and the ability to extend the hands and arms in any direction when trimming, fleshing and handling hides and skins;
- colour discrimination for occupation 8295-136 FUR BLENDER to apply appropriate dye or tint, and for occupation 8295-150 WOOL PULLER for sorting wool by colour;
- physical fitness and sufficient strength to perform light to medium work, requiring the lifting of wet and dry hides, skins and pelts weighing up to fifty pounds;
- near visual acuity to avoid damaging hides, skins and pelts when using knife; when examining them for defects; and when verifying their thickness;
- capacity to work in generally unpleasant conditions such as wetness and odours from hides and chemical solutions or dust from buffing operations; and to adapt to monotony of routine work;
- adaptability to working where there are a variety of hazards, such as exposure to moving machine parts, slips and falls, chemical burns, and knife cuts that may become infected.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- seven to ten years of general education;

- one to six months of on-the-job training, depending on the complexity of the work.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, some of the workers in this chapter may advance to more skilled occupations within the chapter, or to appropriate occupations in Chapter 8296, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PROCESSING, N.E.C. Those who are experienced and have potential for supervision may advance to 8290-110 FOREMAN, HIDE AND PELT PROCESSING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within the chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects such as hides, knives and gauges;
- non-social work, carried on in relation to hides and pelt processing, machines and techniques;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PROCESSING, N.E.C.

WORK PERFORMED

This chapter includes occupations concerned with quality control activities in the processing of a variety of materials or products such as tobacco, hides and pelts. Worker functions include: analyzing data obtained by examination of material to determine type or method of further processing; comparing products to detect flaws in material or defective machine operation; compiling test data and grading information; and handling samples or products during inspection or grading procedures. Work activities include: weighing and measuring hides and pelts; inspecting leather to detect imperfections and determine grade; weighing and testing tobacco to determine quality and moisture content; and examining and testing cigarette wrapping and packaging material to assure conformance to company standards.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8296-114 BLUE-LEATHER GRADER
(leather tan. & fur dress.)

3 7

B

GED SVP

8296-122 LEATHER SORTER
(leather tan. & fur dress.)

3 4

8296-138 WOOL-AND-PELT GRADER
(leather tan. & fur dress.)

GED SVP

2 4

8296-134 HIDE-AND-PELT INSPECTOR
(leather tan. & fur dress.;
slaught. & meat pack.)

2 4

C

GED SVP

8296-118 CIGARETTE TESTER (tobacco)

3 5

8296-146 MOISTURE-CONTENT TESTER
(tobacco)

2 3

8296-126 HOGSHEAD INSPECTOR (tobacco)

3 4

8296-130 CIGARETTE INSPECTOR (tobacco)

2 4

8296-154 TOBACCO-SAMPLE PULLER
(tobacco)

2 2

8296-142 CIGAR INSPECTOR (tobacco)

2 4

N.B. Occupations 8296-110 INSPECTOR, PHARMACEUTICALS AND TOILETRIES (pharm. & toil.) and 8296-150 GRAIN SAMPLER (whole trade) have been transferred, for Volume II purposes, to Chapters 8176, INSPECTING, TESTING AND SAMPLING OCCUPATIONS: CHEMICAL, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING and 8226, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: FOOD, BEVERAGE AND RELATED PROCESSING, respectively.

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>2</u>	4	4	<u>3</u>	4	4	<u>3</u>	M 47	I	3	7	91	9Y	
B	<u>4</u>	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	<u>3</u>	M-H 347	I 47	3-2	4	13	0Y2	
	3										4							
C	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	4	4	5	4	S-M 47	I 5	3-2	5-2	13	20Y	
	3				<u>3</u>						5						23Y	

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to acquire and apply the techniques needed for the examination, evaluation and grading of hides and the determination of subsequent processing procedures;
- spatial perception to visualize the type and quantity of suitable finished products available from raw materials;
- form perception to detect imperfections, uneven thicknesses and quality of surface grain in hides;
- finger dexterity to finger and feel hides for evaluation of weight and quality;
- colour discrimination to distinguish variations in colouring and shade of hides;
- near visual acuity to detect minute imperfections in hides.

B

- learning ability to understand and apply sorting, grading and inspecting procedures and ability to determine the potential use of leather and wool pelts in finished products;
- form perception to observe details to grade hides and pelts;
- eye-hand co-ordination and manual dexterity to effectively manipulate and inspect hides;
- near visual acuity to detect minute defects in hides and pelts;

- colour discrimination to distinguish variations in colouring and shades of hides and pelts;
- strength to perform medium to heavy work frequently requiring the lifting and carrying of bundles of hides or pelts weighing up to fifty pounds;
- agility to work in kneeling or crouched positions when examining hides stretched out on floors;
- adaptability to working in damp and humid conditions while exposed to the noxious odours of hides.

C

- learning ability to understand and apply inspecting and testing procedures used in tobacco processing;
- numerical ability to accurately compute average weight and moisture content of tobacco and tobacco products;
- form perception to detect deviations from colour and quality standards;
- eye-hand-finger co-ordination to handle small amounts of tobacco or when inspecting cigarettes and cigars;
- strength to do very light to medium work frequently involving lifting, handling and carrying products which vary in weight from a few ounces to twenty pounds;
- near visual acuity and good colour vision to detect flaws, impurities and colour variations;
- adaptability to work in close proximity to noisy machines.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten to twelve years of general education;
- up to one year of on-the-job training;
- up to five years experience in related tannery occupations.

B

- eight to ten years of general education;

- two to six months of on-the-job training;
- up to one year as a tannery worker.

C

- seven to nine years of general education;
- one to three months of on-the-job training;
- three to six months in other occupations in a tobacco processing plant.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in these clusters with supervisory potential may advance to appropriate occupations in Volume I, Unit Group 8290, FOREMEN, OTHER PROCESSING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles. Limited possibilities may also exist for workers in Cluster B to advance to 8296-114 BLUE-LEATHER GRADER.

Transfer

There are few transfer possibilities for Blue-Leather Graders. Workers in Cluster B may, with limited additional training, transfer to some occupations in Chapter 8295, HIDE AND PELT PROCESSING OCCUPATIONS. Workers in Cluster C may transfer to some occupations in Chapter 8293, TOBACCO PROCESSING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to processes and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against sensory or judgmental criteria;
- the precise attainment of tolerances or standards.

B and C

Interests

- dealing with things and objects;
- routine and organized work.

Temperaments

- the precise attainment of set standards;
- repetitive or short cycle operations carried out according to set procedures.

Additionally, for Cluster B:

- the evaluation of information against measurable or verifiable criteria.

OCCUPATIONS IN LABOURING AND ELEMENTAL WORK, OTHER PROCESSING

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in the processing of a variety of materials and products such as hides and pelts, tobacco and feathers. Worker functions include: feeding or offbearing materials from machines that wash, dry, or condition them, or convey them to other areas for further processing or storage; and handling materials or products. Work activities include: spreading, drying and trimming hides; hanging sheep-skins in steamrooms; shoveling washed wool into driers; counting and tying hides into bundles; cleaning vats, tanks, drums and tannery walls and floors; hanging bundles of tobacco leaves on chain conveyors; dumping tobacco into chutes or hoppers of machines; removing foreign material from tobacco; and washing and drying feathers and transferring them to storage bins.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8298-110	LABOURER, LEATHER PROCESSING (leather tan. & fur dress.)	2	2	8298-114	LABOURER, TOBACCO PROCESSING (tobacco)	2	2
				8298-118	FEATHER WASHER-AND-DRYER (furn.)	1	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	4	4	4	5	<u>3</u>	4	<u>3</u>	4	4	L-H 347	I 4567	2-1	2		319	23Y
	5	5			4	<u>4</u>		<u>4</u>		5							
										<u>3</u>							

APTITUDES AND CAPACITIES

Workers in this cluster require:

- learning ability to understand simple procedures and carry out uninvolved oral or written instructions;
- eye-hand-finger co-ordination to make precise movements quickly and accurately when feeding or offbearing materials from machines and equipment;
- manual dexterity to move the hands easily and skilfully to perform a variety of tasks involving frequent handling and placing of materials;
- colour discrimination, to a significant degree, for occupation 8298-114 LABOURER, TOBACCO PROCESSING for removing off-colour tobacco passing along a conveyor;
- physical fitness and sufficient strength to perform light to heavy

work with frequent lifting of items weighing from five up to fifty pounds;

- capacity for continual standing and walking;
- ability to perform tasks involving frequent stooping when feeding, loading or unloading processing machines and equipment;
- near and far visual acuity for tasks such as trimming ragged edges or thin areas and brand marks from hides, removing stems and foreign material from tobacco as it moves along a conveyor or sorting and weighing feathers;
- capacity to work while exposed to wet and humid conditions in certain plant areas of hide, tobacco or feather processing operation;
- adaptability to working conditions involving continual noise from machines and hazards such as proximity to operating machinery, fumes and dust.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- six to eight years of general education;

- on-the-job training ranging from a short demonstration for some occupations and up to one month for others.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter are employed primarily in entry occupations, and with experience may advance to higher skilled occupations in Minor Group 829, OTHER PROCESSING OCCUPATIONS.

Transfer

Transfer of workers in this chapter may be to other occupations in labouring and elemental work in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- routine, concrete and organized work;
- dealing with things and objects, such as hides, tobacco or feathers;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences, such as removing stems, off-colour tobacco and foreign material from tobacco, sorting and weighing feathers, or counting hides and tying them into bundles;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

Additionally, for 8298-114 LABOURER, TOBACCO PROCESSING:

- the precise attainment of set limits, tolerances or standards such as placing trays of tobacco on racks in the controlled atmosphere of a conditioning room for a specified time.

OTHER PROCESSING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with operating and tending equipment to process a variety of materials and products.

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C					
8299-110	COATER-LAMINATOR (paper prod.; textile)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 2457	I 7	3	6	91 90Y
8299-114	WALLBOARD LAMINATOR (asbestos & min. wool)	3	4	4	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 7	3	5	91 0Y
8299-118	ACOUSTICAL-TILE SURFACER (asbestos & min. wool; paper prod.)	3	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 47	I 5	3	4	913 0Y
8299-122	INSULATION-BATT-CUTTER OPERATOR (asbestos & min. wool)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 4	I	3	4	913 0Y
8299-124	TENONER-COATER OPERATOR, ACOUSTICAL TILE (asbestos & min. wool; paper prod.)	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 5	3	4	913 20Y
8299-126	CANDLE DECORATOR (misc. prod. fab., n.e.c.)	4	4	5	<u>4</u>	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S 47	I	3	4	913 2Y
8299-130	CANDLE MAKER (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 47	I	3	4	193 2Y
8299-134	ICE-CHIP-MAKER TENDER (utilities, n.e.c.)	4	4	4	<u>4</u>	4	4	<u>4</u>	4	<u>3</u>	3	5	L 24	B	2	4	319 2Y
8299-138	MILL TENDER (any ind.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 47	I 5	2	4	319 2Y
8299-142	LINSEED-OIL EXTRACTOR (animal & veg. oil)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I 5	2	3	319 2Y
8299-146	PROCESSING-EQUIPMENT CLEANER (chem., n.e.c.; petrol. & coal prod.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	H 234	B 4567	2	3	31 23Y
8299-150	ICE MAKER (utilities, n.e.c.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	4	5	M 4	I 4	2	3	319 23Y
8299-154	SCREEN TENDER (any ind.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 4	I 57	2	3	319 23Y
8299-158	MIXER-TENDER, BRUSH MATERIAL (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 47	I 5	2	2	319 23Y
8299-162	CONVEYOR-WASHER TENDER (any ind.)	4	4	4	5	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I 5	2	2	31 23Y
8299-166	WAXER-STACKER-MACHINE TENDER (metal stamp., press. & coat.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I 56	2	2	319 23Y
8299-170	WINDING-MACHINE TENDER (any ind.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	H 47	I	2	2	319 23Y

TOOL-AND-DIE MAKING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with making and repairing custom-made, prototype or special tools, dies, jigs, fixtures or gauges. Worker functions include: working to close tolerances when machining, fitting and assembling workpieces; analyzing information from drawings, models or specifications to plan layouts and sequence of operations; compiling dimensional data from specifications to determine tolerances, limits or standards; and setting up and operating a variety of machine tools such as lathes, shapers, grinders, and milling machines. Work activities include; making mathematical computations when measuring and laying out metal stock; heat treating parts; verifying dimensions of workpieces; using precision measuring devices; testing completed tools or fixtures for proper operation; and dismantling and repairing defective items.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8311-110	TOOL AND DIE MAKER (mach., weld. & forg.)	4	7	8311-130	TOOL MAKER, BENCH (mach., weld. & forg.)	4	7
8311-114	DIAMOND-TOOL MAKER (mach., weld. & forg.)	4	7	8311-134	CARBIDE-TOOL MAKER (mach., weld. & forg.)	4	7
8311-118	DIE MAKER, BENCH, STAMPING (mach., weld. & forg.)	4	7	8311-138	DIE FINISHER (mach., weld. & forg.)	4	7
8311-122	DIE MAKER, WIRE-DRAWING (mach., weld. & forg.)	4	7	8311-142	DIE MAKER, JEWELLERY (metal fab., n.e.c.)	4	6
8311-126	DIE SINKER, BENCH (mach., weld. & forg.)	4	7	8311-146	EXTRUSION-DIE-TEMPLATE MAKER (mach., weld. & forg.)	4	6
				8311-150	WIRE-DIE POLISHER (wire prod.)	3	5

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
3	3	3	2	2	4	3	3	2	5	5	L-M 47	I 6	4-3	7-5		190	0Y
			3	3			2	3	4							19	

APTITUDES AND REQUIREMENTS

Tool and Die Makers require:

- learning ability to understand and apply the knowledge and techniques of tool and die manufacture, metal properties, machining methods, blueprint reading and shop mathematics, and reasoning ability to improvise and design special devices required for a particular industrial process;
- numerical ability to accurately compute dimensions, cutting angles, machine speeds, tolerances, feed rates and depth of cuts;
- spatial perception to visualize shape and mechanical structure of completed product represented on a two-dimensional surface;
- form perception to recognize minute defects in workpieces during machining operations, and to perceive detail and distinguish symbols on prints or drawings;
- eye-hand co-ordination to precisely align and secure workpieces, adjust tooling, and make rapid adjustments to machine controls in response to visual indications of machining malfunctions;
- finger dexterity to use precision measuring devices and tool-setting instruments, and to perform operations such as mounting industrial diamonds at specified angles on diamond cutting tools;
- manual dexterity to set up, operate and adjust a variety of machine tools, and to bench fit and assemble items such as dies, fixtures or gauges;
- physical capacity to stand for prolonged periods of time when monitoring performance of machines, and to reach for, lift and carry objects weighing up to fifty pounds;
- near visual acuity to read micrometers, verniers and other precision measuring devices, and depth perception to align and secure workpieces in machine holding devices;
- capacity for sustained attention to functioning of equipment while exposed to varying degrees of machine shop noises;
- adaptability to conditions in which there are physical hazards, such as the sharp edges on machines or workpieces, moving parts, and flying particles of metal from grinders, lathes or other machine tools.

TRAINING AND ENTRY REQUIREMENTS

Tool and Die Makers normally require:

- ten or more years of general education, preferably technically oriented;
- a four-year apprenticeship training program consisting of practical training and classroom or correspondence instruction; or
- extensive on-the-job training under the guidance of an experienced Tool and Die Maker. This method may be of the same duration, but usually takes longer than an apprenticeship program.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced Tool and Die Makers who acquire the necessary qualifications may advance to machine and tool designers, tool and die inspectors, technical sales representatives, or trade and technical school teachers. Those with supervisory potential may advance to 8310-122 FOREMAN, TOOL AND DIE. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Some workers who acquire knowledge of business practices and the necessary capital may open their own tool and die or machine shop.

Transfer

While tool and die making is one of the most exacting all round metal working trades, transfers are normally to other metal machining occupations in Chapters 8313, MACHINIST AND MACHINE-TOOL SETTING-UP OCCUPATIONS; and 8316, INSPECTING AND TESTING OCCUPATIONS, METAL MACHINING.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- working with objects such as hand tools, gauges or templates, and mechanical things such as lathes, grinders or shapers;
- work which is essentially non-social in nature and carried on in relation to machines and techniques;
- work leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example using precision measuring devices to verify dimensional accuracy of workpieces;
- the precise attainment of set limits, tolerances or standards.

OTHER REQUIREMENTS

Tool and die making is a highly skilled vocation and demands outstanding mechanical ability, imagination and the craftsman's flair for precise workmanship.

MACHINIST AND MACHINE-TOOL SETTING-UP OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with cutting and shaping metal into parts or products of specified dimensions. Worker functions include: setting up and operating machine-tools such as lathes, drill presses, shapers and grinders; analyzing data obtained from specifications and drawings to determine shape of workpieces, materials, machining requirements and sequence of operations; comparing dimensions and other characteristics of finished workpieces to specified requirements; working to close tolerances when machining and measuring workpieces; and setting up machine-tools for less-skilled machine-operators or tenders who perform repetitive-type work. Work activities include: reading drawings or work orders and computing necessary dimensions; measuring and laying out workpieces; positioning and securing workpieces in machines; selecting and installing appropriate cutting tools; loading control tapes into numerically-controlled machines; and moving controls to start, stop and regulate equipment.

LIST OF OCCUPATIONAL TITLES

		A					
		GED	SVP			GED	SVP
8313-110	MACHINIST, EXPERIMENTAL (mach., weld. & forg.)	4	8	8313-174	ROTARY-HEAD-MILLING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	7
8313-114	PATTERNMAKER, METAL (mach., weld. & forg.)	4	8	8313-178	LAY-OUT MAN, MACHINE SHOP (mach., weld. & forg.)	4	7
8313-118	TURBINE-BLADE FITTER (mach., weld. & forg.)	4	8	8313-182	GEAR-CUTTING MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	7
8313-122	MACHINIST, BALLISTICS LABORATORY (mach., weld. & forg.)	4	7	8313-186	BORING-MILL SET-UP OPERATOR, HORIZONTAL (mach., weld. & forg.)	4	6
8313-126	MACHINIST, MODEL MAKER (mach., weld. & forg.)	4	7	8313-190	BORING-MILL SET-UP OPERATOR, VERTICAL (mach., weld. & forg.)	4	6
8313-130	PINION-AND-WHEEL-CUTTING, SET-UP MAN (scient. & ind. equip., n.e.c.)	4	7	8313-194	CHUCKING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	6
8313-134	GRINDER SET-UP OPERATOR, JIG (mach., weld. & forg.)	4	7	8313-198	CHUCKING-MACHINE SET-UP OPERATOR, MULTIPLE-SPINDLE, VERTICAL (mach., weld. & forg.)	4	6
8313-138	INSTRUMENT MAKER (mach., weld. & forg.)	4	7	8313-202	DRILL-PRESS SET-UP OPERATOR, MULTIPLE-SPINDLE (mach., weld. & forg.)	4	6
8313-142	MACHINE-TOOL SETTER (mach., weld. & forg.)	4	7	8313-206	DRILL-PRESS SET-UP OPERATOR, TAPE-CONTROL (mach., weld. & forg.)	4	6
8313-146	MACHINE-TOOL SET-UP OPERATOR (mach., weld. & forg.)	4	7	8313-210	ELECTRICAL-DISCHARGE-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	6
8313-150	MACHINIST, AUTOMOTIVE (mach., weld. & forg.)	4	7	8313-214	ENGINE-LATHE SET-UP OPERATOR (mach., weld. & forg.)	4	6
8313-154	MACHINIST, GENERAL (mach., weld. & forg.)	4	7	8313-218	GRINDER SET-UP OPERATOR, PRECISION (mach., weld. & forg.)	4	6
8313-158	MACHINIST, MOTION-PICTURE EQUIPMENT (mach., weld. & forg.)	4	7				
8313-162	MAINTENANCE MACHINIST (mach., weld. & forg.)	4	7				
8313-166	SAMPLE MAKER, HOUSEHOLD APPLIANCES (electric. equip.; mach., weld. & forg.)	4	7				
8313-170	JIG BORER, TAPE-CONTROL (mach., weld. & forg.)	4	7				

CHAPTER 8313

		GED	SVP			GED	SVP
8313-222	GRINDER SET-UP OPERATOR, THREAD (mach., weld. & forg.)	4	6	8313-274	GEAR-HOBBER SET-UP OPERATOR (mach., weld. & forg.)	4	6
8313-226	MILLING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	6	8313-278	HONING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	6
8313-230	PANTOGRAPH MILLING- MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	6	8313-282	SCREW-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	6
8313-234	PLANER SET-UP OPERATOR (mach., weld. & forg.)	4	6	8313-286	SHAPER SET-UP OPERATOR (mach., weld. & forg.)	4	6
8313-238	PROFILING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	6	8313-290	BROACHING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	5
8313-242	TAPE-CONTROL-MACHINE-TOOL SET-UP OPERATOR (mach., weld. & forg.)	4	6	8313-294	DRILL-PRESS SET-UP OPERATOR, SINGLE SPINDLE (mach., weld. & forg.)	4	5
8313-246	TURRET-LATHE SET-UP OPERATOR (mach., weld. & forg.)	4	6	8313-298	GEAR-LAPPING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	5
8313-250	GEAR-MILLING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	6	8313-302	GRINDER, GEAR (mach., weld. & forg.)	4	5
8313-254	GEAR-SHAVER SET-UP OPERATOR (mach., weld. & forg.)	4	6	8313-306	GRINDER SET-UP OPERATOR, CENTERLESS (mach., weld. & forg.)	4	5
8313-258	SPIRAL-BEVEL-GEAR-GENERATOR SET-UP OPERATOR (mach., weld. & forg.)	4	6	8313-310	GEAR-SHAPER SET-UP OPERATOR (mach., weld. & forg.)	4	5
8313-262	THREAD-MILLING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	6	8313-314	KEYSEATING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	5
8313-266	TOOL GRINDER (mach., weld. & forg.)	4	6	8313-318	LAPPING-MACHINE SET-UP OPERATOR (mach., weld. & forg.)	4	5
8313-270	GEAR GENERATOR SET-UP OPERATOR, STRAIGHT BEVEL (mach., weld. & forg.)	4	6	8313-322	RADIAL-DRILL-PRESS SET-UP OPERATOR (mach., weld. & forg.)	4	5

B

		GED	SVP			GED	SVP
8313-326	MAIN-BEARING BORER (mach., weld. & forg.)	3	5	8313-332	PRINTING-ROLLER GRINDER AND POLISHER (mach., weld. & forg.; mech. equip., n.e.c.)	3	5
8313-330	METAL-BAND-SAW OPERATOR (mach., weld. & forg.)	3	5	8313-334	ROUTER OPERATOR (mach., weld. & forg.)	3	5

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 47	I 56	4	8-5	910	Y01
				<u>3</u>	<u>3</u>			<u>2</u>	<u>2</u>								
B	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	4	M 47	I 56	3	5	91	OY
							<u>4</u>	<u>3</u>	<u>2</u>	4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand metal properties, machining methods and shop mathematics, and to carry out machining instructions furnished in written or diagrammatic form;
- spatial perception to visualize finished workpiece from drawings, to lay out workpiece and to set up machine-tools to produce products according to specifications;
- form perception to examine surface for finish quality and measure finished workpiece for conformance to specifications;
- eye-hand co-ordination to skilfully and accurately set up and operate machine-tools;
- finger dexterity to make precise finger movements when using measuring instruments and to fit and assemble small parts;

- manual dexterity to handle machine controls, tools and parts;
- sufficient strength to perform medium work requiring the lifting and positioning of parts and materials weighing up to fifty pounds;
- near visual acuity and depth perception to set up and operate machines; and verify accuracy of finished workpiece;
- capacity to work around noisy machinery and handle greasy and dirty mechanisms and parts;
- adaptability to working where there are a variety of hazards such as exposure to moving mechanical parts, cuts and bruises.

Workers in Cluster A, also require:

- numerical ability to compute dimensions, tapers, cutting angles, tool settings, feed rates and machine speeds.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- for occupations requiring all-round machinist skills, a four to six-year apprenticeship program;
- completion of certification requirements.

- for occupations involving only the setting up and operation of one or two types of machine-tools, six months to two years of on-the-job training and related experience.

B

- eight to ten years of general education;
- six months to one year of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter, with additional training, may advance within their own cluster, and those in Cluster B may advance to some occupations in A. Some workers in Cluster A may advance to appropriate occupations in other chapters; for example, 8311-110 TOOL AND DIE MAKER; 2165-246 MECHANICAL-ENGINEERING TECHNICIAN; 8316-114 INSPECTOR, MACHINE SHOP; 2791-126 VOCATIONAL TEACHER, TECHNICAL SUBJECTS; and 5131-134 TECHNICAL SALESMAN, INDUSTRIAL MACHINERY AND EQUIPMENT. Those with potential for supervision may advance to appropriate occupations in Volume I, Unit Group 8310, FOREMEN, METAL MACHINING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in both clusters may transfer to other occupations requiring similar skills, for example, those in Chapter 8315, MACHINE-TOOL OPERATING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to metal machining techniques;
- dealing with things and objects of a mechanical nature.

Additionally, for Cluster A:

- work resulting in tangible, productive satisfaction.

Temperaments

- the precise attainment of specified machining tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, for example, verifying dimensions of finished workpiece using measuring instruments.

Additionally, for Cluster A:

- a variety of duties often characterized by frequent change.

MACHINE-TOOL OPERATING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with cutting and shaping metal into parts or products, on a production basis, using machine-tools that are normally set up for repetitive work. Worker functions include: operating production lathes, drill presses, milling machines, grinders or specialized machine-tools; tending a variety of automatic or semi-automatic metal-cutting machines; and comparing dimensions of finished products to specifications. Work activities include: reading work orders to obtain job specifications; positioning and securing work-pieces in machines; starting machines and adjusting controls to regulate cutting speeds, feed rates and depth of cut; measuring finished products using precision instruments; and sharpening cutting tools.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8315-110	FITTER, FIREARMS (metal fab., n.e.c.)	3	6	8315-150	DRILL-PRESS OPERATOR, PRODUCTION (mach., weld. & forg.)	3	4
8315-114	AUTOMATIC-WHEEL-LINE OPERATOR (railway)	3	6	8315-154	FILE CUTTER (metal fab., n.e.c.)	3	4
8315-118	CONNECTING-ROD BORER (motor vehicle)	3	6	8315-158	HONING-MACHINE OPERATOR, PRODUCTION (mach., weld. & forg.)	3	4
8315-122	MACHINE-TOOL OPERATOR, PRODUCTION (mach., weld. & forg.)	3	6	8315-162	METAL-SAWING-MACHINE OPERATOR (mach., weld. & forg.)	3	4
8315-126	WOODWORKING-CUTTER SHARPENER (metal fab., n.e.c.)	3	5	8315-166	THREADING-MACHINE OPERATOR (mach., weld. & forg.)	3	4
8315-130	AUTOMATIC-LATHE OPERATOR, CLOCK (scient. & ind. equip., n.e.c.)	3	5	8315-170	DRILLING-AND-END-MILLING-MACHINE OPERATOR (mach., weld. & forg.)	3	3
8315-134	BRAKE-DRUM-LATHE OPERATOR (motor vehicle)	3	5	8315-174	GRINDER OPERATOR, PRODUCTION (mach., weld. & forg.)	3	3
8315-138	SCREW-MACHINE OPERATOR, CUSTOM (mach., weld. & forg.)	3	5	8315-178	LATHE OPERATOR, PRODUCTION (mach., weld. & forg.)	3	3
8315-142	BORING-MACHINE OPERATOR, PRODUCTION (mach., weld. & forg.)	3	4	8315-182	MILLING-MACHINE OPERATOR, PRODUCTION (mach., weld. & forg.)	3	3
8315-146	COLLET MAKER (scient. & ind. equip., n.e.c.)	3	4				

B

		GED	SVP			GED	SVP
8315-186	BROACHING-MACHINE TENDER, PRODUCTION (mach., weld. & forg.)	3	3	8315-206	ELECTRICAL-DISCHARGE-MACHINE TENDER (mach., weld. & forg.)	2	3
8315-190	SCREWMAKER, AUTOMATIC (mach., weld. & forg.)	3	3	8315-210	GEAR-CUTTING-MACHINE TENDER (mach., weld. & forg.)	2	3
8315-194	TAPPING-MACHINE TENDER (mach., weld. & forg.)	3	3	8315-214	LAPPING-MACHINE TENDER, PRODUCTION (mach., weld. & forg.)	2	3
8315-198	TRANSFER-MACHINE TENDER (mach., weld. & forg.)	2	4	8315-218	LAP-TRUING-MACHINE TENDER (scient. & ind. equip., n.e.c.)	2	3
8315-202	BARREL RIFLER (metal fab., n.e.c.)	2	3				

		GED	SVP			GED	SVP
8315-222	PLASTIC SAWYER (misc. prod. fab., n.e.c.)	2	3	8315-230	SCRIBING-MACHINE TENDER (metal fab., n.e.c.)	2	3
8315-226	SCREW-MACHINE TENDER, PRODUCTION (mach., weld. & forg.)	2	3	8315-234	BLADE SHARPENER (metal fab., n.e.c.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 56	3	6-3	91	Y0	
		3					<u>4</u>	<u>3</u>									Y02	
B	4	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L-M 47	I 56	3-2	4-2	319	2Y	
				<u>3</u>	<u>4</u>	5	<u>3</u>											

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply the procedures for operating or tending machine-tools and reasoning ability to determine causes of machining irregularities;
- spatial perception to understand the function of machine-tools and visualize the relationship of moving parts to detect malfunctions or need for adjustment;
- form perception to detect surface defects on machined workpieces, such as burrs, nicks or scratches;
- eye-hand co-ordination to position and secure workpieces in holding devices and to make rapid adjustments to controls if a machining malfunction occurs;
- finger dexterity to manipulate precision measuring instruments such as micrometers, verniers or calipers;

- manual dexterity and the ability to extend the arms and hands to use hand tools and grinders to remove and sharpen cutting tools, or to adjust machine controls to regulate cutting speed, feed rate and depth of cut;
- physical capacity to lift and carry workpieces or tools weighing up to fifty pounds;
- near visual acuity to read graduations on precision measuring instruments;
- capacity to work in proximity to a variety of machine-tools which create considerable noise;
- adaptability to working where there are physical hazards, such as sharp edges on workpieces, moving parts on machines, and flying particles from grinders, lathes or other machine tools.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

- A**
- ten years of general education, preferably with emphasis on technical subjects;

- three months to two years of on-the-job training, depending on the complexity of the occupation.

- B**
- eight to ten years of general education;
 - one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for workers in this chapter may be to operators of more complex machine-tools within their own cluster; or from occupations in Cluster B to some occupations in A. Skilled workers who acquire diversified experience on a number of machine-tools may advance to appropriate occupations in Chapter 8313, MACHINIST AND MACHINE-TOOL SETTING-UP OCCUPATIONS. Those with potential for supervision may advance to 8310-110 FOREMAN, MACHINE-TOOL OPERATORS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their cluster.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving:

Interests

- work which is essentially non-social in nature and carried on in a machine-oriented environment;
- working with things or objects such as hand tools, machine-tools and measuring devices.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards as specified on work sheets or drawings;
- the evaluation of information against measurable or verifiable criteria, for example, using measuring devices to verify dimensional accuracy of workpiece.

INSPECTING AND TESTING OCCUPATIONS, METAL MACHINING

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the machining of a variety of metal parts and products. Worker functions include: compiling and analyzing data from drawings and specifications to determine inspection or test procedures; comparing dimensional and structural characteristics of machined articles to specified standards; working to close tolerances when using micrometers, vernier calipers, height gauges and other precision measuring instruments; and operating or tending equipment to test performance or accuracy of assembled mechanisms. Work activities include: inspecting, testing and adjusting mechanical assemblies, tools, fixtures, measuring instruments and similar items; examining finish of machined parts for defects; recording inspection or test results; and recommending corrective machining procedures.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8316-110	INSPECTOR, TOOL AND GAUGE (mach., weld. & forg.)	4	7	8316-122	PROPELLER INSPECTOR (ship & boat bldg.)	4	6
8316-114	INSPECTOR, MACHINE SHOP (mach., weld. & forg.)	4	7	8316-126	DIFFERENTIAL-GEAR TESTER (motor vehicle)	3	5
8316-118	GEAR INSPECTOR (mach., weld. & forg.)	4	7				

B

		GED	SVP
8316-130	GEAR TESTER (mach., weld. & forg.; motor vehicle)	3	4

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	3	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 467	I	4-3	7-6	91	Y0
		4	4	<u>4</u>	<u>3</u>	3		<u>3</u>									
B	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 467	I	3	4	913	Y02

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply a variety of involved inspecting, testing and calibrating procedures, and reasoning ability to determine causes of defects and necessary corrective action;
- spatial perception to visualize three dimensional forms and assemblies represented in drawings;
- form perception to recognize physical defects such as wear, surface faults and warping when inspecting products, tools and gauges;
- eye-hand co-ordination when using test equipment and measuring devices, or when setting up and aligning gears in testing machines, and to use files or grinders to remove high spots from gears or machined parts;
- manual dexterity to move the hands skilfully when disassembling

and reassembling tools, gauges and measuring instruments, or when setting up and adjusting test equipment, mounting gears on spindles and installing spindle in gear-testing machine;

- physical capacity to reach for and handle tools, gauges and other objects, and to lift and carry jigs, fixtures, materials and machinery parts weighing up to fifty pounds;
- good hearing to detect indications of mechanical malfunctioning of parts or assemblies such as detecting improper gear meshing;
- near visual acuity to read fine scales of precision measuring instruments and when examining items for defects.

Additionally, for Cluster A:

- finger dexterity to use precision instruments such as micrometers, dial indicators or calipers.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten to twelve years of general education;
- six months to four years of combined on-the-job training and related experience with emphasis on the use of drawings, specifications and precision measuring instruments.

B

- nine to ten years of general education;
- up to six months of combined on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to more skilled occupations within the chapter. Those who demonstrate technical proficiency and have supervisory potential may advance to 8310-118 FOREMAN, METAL MACHINING, INSPECTION. see also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities may be to other occupations requiring similar basic skills in Chapter 8526, INSPECTING AND TESTING OCCUPATIONS, FABRICATING AND ASSEMBLING METAL PRODUCTS, N.E.C., such as 8526-282 PURCHASED-METAL-PARTS INSPECTOR, and 8526-290 SALVAGE INSPECTOR, INSTRUMENTS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things or objects, such as hand tools or measuring devices, or mechanical items, such as gear-testing machines.

Additionally, for Gear Testers:

- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, for example comparing test equipment readings with standards specified in drawings to determine acceptability of product.

Additionally, for Gear Testers:

- repetitive or short cycle operations carried out according to set procedures or sequences.

METAL MACHINING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with machining metal, plastic or similar materials to produce or repair parts or products.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8319-110	PLASTIC-TOOL MAKER (mach., weld. & forg.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 7	4	6	91	Y0
8319-114	PLASTIC-FIXTURE BUILDER (mach., weld. & forg.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 7	3	6	91	Y0
8319-118	SCRAPER, HAND (mach., weld. & forg.)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 47	I	3	6	91	Y0
8319-122	BABBITTER (mach., weld. & forg.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 6	3	5	91	Y0
8319-126	FILER, HAND (mach., weld. & forg.)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I	3	5	91	Y0
8319-130	LAPPER, HAND (mach., weld. & forg.)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	3	5	91	Y0
8319-134	SMOKING-PIPE REPAIRMAN (misc. prod. fab., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I 6	3	5	91	Y0
8319-138	PISTON AND VALVE MAKER (misc. prod. fab., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I 6	3	5	91	Y0
8319-142	SAW-EDGE FUSER (mach., weld. & forg.; metal fab. n.e.c.)	<u>3</u>	4	4	3	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 56	3	5	91	Y0
8319-146	SAW MAKER (mach., weld. & forg.; metal fab., n.e.c.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 56	3	5	91	Y0
8319-150	SAW REPAIRMAN (mach., weld. & forg.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 56	3	5	91	Y0
8319-154	MOULD FINISHER (mach., weld. & forg.)	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5	M 47	I 56	3	5	91	Y0
8319-158	TRIM-MACHINE ADJUSTER (explosives)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 347	I 5	3	4	91	Y0
8319-162	CARBON SALVAGE MAN (mach., weld. & forg.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5	M 47	I 5	3	4	91	Y0
8319-164	CONTACT-LENS CUTTER (scient. & ind. equip., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	S 47	I	3	4	91	Y0
8319-165	CONTACT-LENS-LATHE OPERATOR (scient. & ind. equip., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	S 47	I	3	4	91	Y0
8319-166	SCARFING-AND-BORING-MACHINE OPERATOR (mach., weld. & forg.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	H 347	I 56	3	4	91	Y0
8319-170	SERRATING-MACHINE OPERATOR (mach., weld. & forg.)	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5	M 47	I 56	3	4	91	Y0
8319-174	BALANCER, WATCH-BALANCE WHEEL (scient. & ind. equip., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	S 47	I	3	4	91	Y0
8319-178	DEBURRER (scient. & ind. equip., n.e.c.)	4	4	5	4	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	3	3	931	2Y
8319-180	CARBIDE-TOOL WORKER (mach., weld. & forg.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I 6	2	4	391	2Y
8319-184	PIPE CUTTER, MACHINE (mach., weld. & forg.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	H 34	I	2	3	391	2Y
8319-186	TRIM-MACHINE TENDER (explosives)	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 4	I 5	2	3	391	2Y
8319-190	BUTTON FINISHER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	S 47	I	2	2	31	23Y
8319-194	DRILLER, PORTABLE DRILL (mach., weld. & forg.)	4	4	5	4	4	5	<u>3</u>	4	<u>4</u>	5	5	M 47	B 56	2	2	319	23Y
8319-198	EYEGLASS-FRAME CUTTER (scient. & ind. equip., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5	L 47	I 567	2	2	931	23Y
8319-202	KEY CUTTER (metal fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>4</u>	5	5	L 47	I 5	2	2	931	23Y
8319-206	MACHINE SHOP HELPER (mach., weld. & forg.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	M 34	I 56	2	3	319	3Y2

Group 8319

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8319-210	SMOKING-PIPE-BIT FINISHER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>4</u>	5	5	L 47	I 67	2	2	319	23Y
8319-214	BUTTON MAKER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	L 47	I 7	2	2	319	23Y

FORGING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with forming metal into desired shape by forging, with or without the benefit of heat. Worker functions include: operating or tending forging machines and equipment such as power presses and drop hammers; comparing colour of heated articles to specified standards to determine correct forging temperatures; compiling information from drawings, work orders or specifications to select materials and determine forging requirements; handling and feeding parts into furnaces or machines; and setting up machines for specific functions. Work activities include: selecting, installing and securing dies in forging machines such as forging and coining presses, drop hammers, forging rolls and upsetters; transferring heated workpiece from furnace to machine; moving controls to start, stop and regulate machine action; examining finished forgings for defects; and verifying their dimensional accuracy.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8331-110 DIE SETTER (mach., weld. & forg.)

4 7

B

GED SVP

GED SVP

8331-118 POWER-HAMMER OPERATOR
(mach., weld. & forg.)

3 7

8331-154 BOLT-MACHINE OPERATOR,
AUTOMATIC (wire prod.)

3 4

8331-122 DROP-HAMMER OPERATOR
(mach., weld. & forg.)

3 6

8331-158 BUCKSHOT-SWAGE OPERATOR
(mach., weld. & forg.)

3 4

8331-126 VEHICLE-SPRING REPAIRMAN
(motor vehicle)

3 5

8331-162 HEADER-MACHINE OPERATOR
(mach., weld. & forg.)

3 4

8331-130 FORGE-MANIPULATOR
OPERATOR
(mach., weld. & forg.)

3 5

8331-166 NUT FORMER
(mach., weld. & forg.)

3 4

8331-170 UPSETTING-MACHINE
OPERATOR
(mach., weld. & forg.)

3 4

8331-134 IMPACT-HAMMER OPERATOR
(mach., weld. & forg.)

3 5

8331-174 HEADER OPERATOR, STEEL
SHOT (mach., weld. & forg.)

3 3

8331-138 FORGING-PRESS OPERATOR
(mach., weld. & forg.)

3 5

8331-178 LEAF-SPRING MAKER
(metal fab., n.e.c.)

3 3

8331-142 FORGING-ROLL OPERATOR
(mach., weld. & forg.)

3 5

8331-186 COILER, HOT-WOUND SPRINGS
(metal fab., n.e.c.)

2 3

8331-146 SPIKE-MACHINE OPERATOR
(mach., weld. & forg.)

3 5

8331-150 BULLET-SWAGING-MACHINE
ADJUSTER
(mach., weld. & forg.)

3 4

C

GED SVP

GED SVP

8331-182 LEVERMAN (mach., weld. & forg.)

2 4

8331-194 FORGING-PRESS TENDER
(mach., weld. & forg.)

2 3

8331-190 BULLET CUTTER AND FORMER
(mach., weld. & forg.)

2 3

8331-206 NAIL-MAKING-MACHINE TENDER
(wire prod.)

2 2

D

		GED	SVP			GED	SVP
8331-198	FORGE HELPER (mach., weld. & forg.)	2	3	8331-210	SPIKE-MACHINE FEEDER (mach., weld. & forg.)	2	2
8331-202	POWER-HAMMER-OPERATOR HELPER (mach., weld. & forg.)	2	3				

N.B. Occupation 8331-114, BLACKSMITH (mach., weld. & forg.) has been transferred, for Volume II purposes, to Group 8339, METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING, N.E.C.

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	H 347	I 56	4	7	901	Y01
B	3	4	4	4	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M-H 47	I 3567	3-2	7-3	91	Y0 Y02
	4			<u>3</u>	<u>4</u>	5	<u>4</u>			5	<u>3</u>						
C	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 47	I 35	2	4-2	931	2Y3
			4		<u>3</u>					5	<u>3</u>						
D	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	<u>3</u>	M-H 47	I 356	2	3-2	13	23Y 23
			4								4						
											5						

APTITUDES AND CAPACITIES

Workers in this chapter require:

A and B

- learning ability to understand forging processes and to apply the techniques of setting up and operating machines involved in forging operations;
- spatial perception to set up, operate and repair machinery and to verify dimensions of workpieces;
- form perception to inspect workpiece for conformance to specifications and to read measuring instruments;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to align and install dies or other fixtures in forging machines using hand tools, and to use measuring instruments when verifying dimensions of forged pieces;
- sufficient strength to perform medium to heavy work, requiring frequent lifting of items weighing up to fifty pounds, and frequent standing or walking when setting up forging machines or observing forging operations.

Additionally for 8331-110 DIE SETTER, physical capacity to work in awkward positions such as stooping, kneeling and crouching when installing dies and positioning fixtures and stops in forging machines.

Additionally for B:

- colour discrimination to observe colour of metal in furnace to determine forging temperature;
- capacity to work while exposed to heat from furnaces and hot metal, and atmospheric conditions such as fumes, odours and dust.

C and D

- learning ability to understand and carry out detailed but uninvolved written or oral instructions;
- eye-hand-finger co-ordination to thread wire through straightening rollers and feeding mechanisms into slots of die plates, and eye-hand co-ordination when removing hot metal from furnace and positioning it on anvil of forging machine;
- manual dexterity to skilfully use hand tools and measuring instruments, and to manipulate heated metal on hammer anvil using tongs;
- colour discrimination to determine when metal has been heated to desired forging temperature, especially for 8331-194 FORGING-PRESS TENDER and 8331-210 SPIKE-MACHINE FEEDER;
- sufficient strength to perform generally medium to heavy work requiring frequent lifting of items weighing up to fifty pounds, with the occasional lifting of items weighing seventy-five pounds, and frequent standing and walking in order to observe machine operations and to move hot metal from furnace to forging equipment;
- near-visual acuity to examine workpieces for defects and to grind surfaces of finished parts;
- capacity to work while exposed to heat from a forge, furnace or hot metal, and to continual loud forging shop noise.

Additionally, for Cluster C:

- form perception to visually detect scratches, distortions or malformations of finished forgings.

Additionally, for Cluster D:

- adaptability to physical hazards such as moving mechanical parts and handling hot metal.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- nine to eleven years of general education;
- two to four years of on-the-job training.

B

- eight to ten years of general education;
- up to four years of on-the-job training; or
- up to three years of related experience and from two to six months of on-the-job training.

C

- seven to eight years of general education;
- up to six months of on-the-job training.

D

- seven to eight years of general education;
- up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for workers in Cluster C may be to occupations in B. Workers in both clusters may advance within their own individual cluster or with experience and training to 8331-110 DIE SETTER. Occupations in Cluster D are generally considered as entry positions and workers who acquire experience and have ability may advance to occupations in the other clusters. Experienced workers with potential for supervision may advance to 8330-114 FOREMAN, FORGING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills in Minor Group 833, METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING; for example, 8336-118 INSPECTOR, FORGINGS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A and B

Interests

- activities that are non-social in nature, and are carried on in relation to forging processes, machines and techniques;
- dealing with things and objects.

Additionally for A:

- activities leading to satisfaction from tangible results, such as devising or adapting jigs and fixtures.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria to arrive at decisions, such as inspecting sample workpiece to verify conformance of die setup to specifications.

Additionally for A:

- a variety of duties often characterized by frequent change.

C and D

Interests

- activities of a routine, concrete and organized nature;
- dealing with things and objects.

Additionally for C:

- activities that are non-social in nature and are carried on in relation to forging processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards;
- doing things only under specific instructions, allowing little or no room for independent action or judgment in working out job problems.

SHEET-METAL WORKERS

WORK PERFORMED

This chapter includes occupations concerned with making and repairing sheet-metal parts or products, usually on a custom basis. Worker functions include: manipulating hand tools, power tools, measuring instruments and special sheet-metal working devices; working to close tolerances when laying out, cutting and shaping sheet-metal; compiling and analyzing information from drawings or work orders to determine job specifications and fabrication procedures; and comparing dimensions and finish of completed items to specified standards. Work activities include: marking dimensions and reference lines on sheet-metal stock; operating machines such as shears, brakes and presses to cut, bend, punch, drill and straighten metal parts; assembling furnace casings, hoods, air ducts, partitions, appliance cabinets, prototype models and similar items; installing products in buildings; and repairing surface defects in sheet-metal parts.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8333-110	MODEL MAKER, HEATING APPARATUS (metal fab., n.e.c.)	4	8	8333-122	MODEL MAKER, FLUORESCENT LIGHTING (metal stamp., press. & coat.)	4	7
8333-114	COPPERSMITH (metal stamp., press. & coat.)	4	8	8333-126	MODEL MAKER, METAL FURNITURE (metal stamp., press. & coat.)	4	6
8333-118	SHEET-METAL WORKER (construction; metal stamp., press. & coat.)	4	7	8333-130	SHEET-METAL LAYOUT-MAN (metal stamp., press. & coat.)	4	6

B

		GED	SVP			GED	SVP
8333-134	SHEET-METAL CUT-OUT MAN (misc. prod. fab., n.e.c.)	3	3	8333-138	SHEET-METAL FINISHER (metal stamp., press. & coat.)	2	4
				8333-142	CUTTER, ALUMINUM SHEET (ship & boat bldg.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>2</u>	5	4	M 2347	I 56	4	8-6	9170	0Y14	
				<u>3</u>	<u>2</u>				<u>3</u>	4	5	M 347	I			910	0Y1	
B	4	4	4	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 347	I 56	3-2	4-3	193	Y02	
	3			<u>3</u>		5	4	<u>3</u>		5	4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand the principles of working with sheet-metal, methods of assembly and the use of the product, and reasoning ability and judgment to determine layout and sequence for fabrication;
- numerical ability to make calculations of quantity, size and shape of articles to be made, and to prepare bids and estimates;
- spatial perception to visualize size and shape of sheet-metal product

- to be fabricated from, or to depict these shapes as, two dimensional sketches and drawings when making products or designs for components and products;
- form perception to make visual comparisons of slight differences in width, length, or finish of sheet-metal components or installations when examining them to ensure conformance to specifications;
- eye-hand-finger co-ordination and finger dexterity to measure and mark dimensions and reference lines on metal stock and to position and trace around patterns and templates with a variety of tools;

- manual dexterity to move the hands easily and skilfully to cut out and assemble sheet-metal products;
- sufficient strength to perform medium work requiring frequent lifting of items weighing up to twenty pounds with occasional lifting of items weighing up to fifty pounds, and frequent standing when laying out, cutting and assembling sheet-metal parts or products;
- for 8333-114 COPPERSMITH and 8333-118 SHEET-METAL WORKER, agility to climb ladders or work on scaffolds;
- physical ability to work in awkward positions such as stooping, kneeling and crouching, and to extend the hands and arms when laying out markings on metal and assembling sheet-metal or copper products;
- good vision to read blueprints and markings on measuring instruments when doing layouts and assemblies;
- capacity to work while exposed to loud noise from metalworking machines and adaptability to physical hazards, such as moving mechanical parts of machines and hot metal from welding, brazing or soldering operations especially significant for occupations 8333-114 COPPERSMITH and 8333-118 SHEET-METAL WORKER.

B

- learning ability to understand and carry out sheet-metal fabricating

- and repairing activities and to follow detailed written or oral instructions;
- spatial perception to visualize the placement of templates on sheet-metal and avoid wastage of material;
- form perception to detect surface defects such as dents, buckles and scratches on sheet-metal parts or products;
- eye-hand co-ordination and manual dexterity to mark cutting and forming lines on metal stock and to remove defects from workpieces;
- finger dexterity to position templates on metal sheets and to use measuring and marking instruments such as micrometers and scribes;
- sufficient strength to perform medium work requiring frequent lifting of items weighing up to twenty pounds, and frequent standing when marking and cutting sheet-metal;
- physical ability to work in awkward positions such as stooping, and to extend the hands and arms in any direction when installing or repairing ducts or stacking metal sheets on cutting table;
- near visual acuity to inspect sheet metal-articles for surface defects, to follow cutting lines and to read scale markings on micrometers;
- capacity to work while exposed to loud sheet metal shop noises;
- adaptability to working conditions where there are possibilities of injuries from sharp edges of sheet-metal or from metal-working machines.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- a four to five-year apprenticeship program; or
- two to five years of on-the-job training;

- for 8333-114 COPPERSMITH and 8333-118 SHEET-METAL WORKER, completion of provincial certification examinations.

B

- eight to ten years of general education;
- up to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Workers in Cluster B may advance to more skilled occupations within that cluster, or in Cluster A. Experienced workers with supervisory potential may advance to 8330-122 FOREMAN, SHEET-METAL WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Well qualified sheet-metal workers who acquire knowledge of business practices may also become self-employed.

Transfer

Transfer may be to other occupations requiring similar skills within the individual cluster or in other chapters, for example, 8787-110 ROOFER, METAL, or to appropriate occupations in Chapter 8334, METALWORKING-MACHINE OPERATORS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A**Interests**

- non-social work carried on in relation to sheet-metal processes, machines and techniques;
- dealing with things and objects;
- activities leading to satisfaction from tangible results, such as designing and fabricating models of products.

Temperaments

- the evaluation of information against measurable or verifiable criteria to arrive at decisions, such as laying out and marking metal according to drawings and templates;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B

Interests

- dealing with things and objects;
- non-social work carried on in relation to sheet-metal processes, machines and techniques;
- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria to arrive at decisions, such as selecting metal of the proper thickness, by measuring it with a micrometer;
- repetitive or short cycle operations carried out according to set procedures or sequences.

METALWORKING-MACHINE OPERATORS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with utilizing powered metalworking machines to produce metal parts or products such as tinware, furniture and light structural frames from sheet metal, tubing, wire or bar stock, usually on a production basis. Worker functions include: setting up, operating or tending metalworking machines such as shears, brakes, rolls, riveters, spot welders and punch presses; compiling job specifications from drawings, charts or work orders; and comparing shape, dimensions and finish of completed articles to ensure specifications are met. Work activities include: positioning, aligning and securing dies, punches, guides, stops and other parts of metalworking machines; positioning workpieces in or threading coiled materials through machine guides; moving controls to start and stop equipment; observing metalworking operations and making necessary machine adjustments; and measuring finished products to verify dimensions.

LIST OF OCCUPATIONAL TITLES

		A					
		GED	SVP			GED	SVP
8334-110	SLIDE-FORMING-MACHINE SET-UP MAN (metal stamp., press. & coat.)	4	7	8334-134	SLIDE-FORMING-MACHINE SET-UP OPERATOR (metal stamp., press. & coat.)	3	6
8334-114	METALWORKING-MACHINE SET-UP MAN (metal stamp., press. & coat.)	4	6	8334-138	NAIL-MAKING-MACHINE SET-UP OPERATOR (wire prod.)	3	5
8334-118	BRAKE SET-UP OPERATOR (metal stamp., press. & coat.)	4	6	8334-142	POWER-PRESS SET-UP OPERATOR (metal stamp., press. & coat.)	3	5
8334-122	FORMING-ROLL SET-UP OPERATOR (metal stamp., press. & coat.)	4	6	8334-146	BENDING-MACHINE SET-UP OPERATOR (metal stamp., press. & coat.)	3	5
8334-126	STRAIGHT-LINE-PRESS SET-UP MAN (metal stamp., press. & coat.)	3	6	8334-150	INDUSTRIAL-NEEDLE-MACHINE SETTER-OPERATOR (misc. prod. fab., n.e.c.)	3	5
8334-130	SHEET-METAL-WORKING-MACHINE SET-UP OPERATOR (metal stamp., press. & coat.)	3	6	8334-154	MULTI-OPERATION-FORMING-MACHINE SET-UP OPERATOR (metal stamp., press. & coat.)	3	5
		B		8334-158	SPRING-MAKING-MACHINE SET-UP OPERATOR (metal fab., n.e.c.; wire prod.)	3	5
		GED	SVP			GED	SVP
8334-178	DISK-FLANGING OPERATOR (metal stamp., press. & coat.)	3	5	8334-198	STRAIGHTENING-PRESS OPERATOR (metal stamp., press. & coat.)	3	5
8334-182	DUPLICATOR-PUNCH OPERATOR (metal stamp., press. & coat.)	3	5	8334-202	ROLL-THREADER OPERATOR (wire prod.)	3	5
8334-186	SPINNER, METAL (metal stamp., press. & coat.)	3	5	8334-206	FLYING-SHEAR OPERATOR (iron & steel)	3	4
8334-190	STRIP-ROLL-FORMING-MACHINE OPERATOR (metal stamp., press. & coat.)	3	5	8334-210	NIBBLER OPERATOR (metal stamp., press. & coat.)	3	4
8334-194	FENCE-MAKING-MACHINE OPERATOR (wire prod.)	3	5	8334-214	POWER-SHEAR OPERATOR (metal stamp., press. & coat.)	3	4
				8334-218	PUNCH-AND-SHEAR-MACHINE OPERATOR (metal stamp., press. & coat.)	3	4

CHAPTER 8334

		GED	SVP			GED	SVP
8334-222	PUNCH-PRESS OPERATOR (metal stamp., press. & coat.)	3	4	8334-250	IMPRESSION-DIE-PRESS OPERATOR (metal stamp., press. & coat.)	3	4
8334-226	ROLL OPERATOR, SHEET METAL (metal stamp., press. & coat.)	3	4	8334-254	TUBE BENDER, MUSICAL INSTRUMENTS (misc. prod. fab., n.e.c.)	3	4
8334-230	ROTARY-SHEAR OPERATOR (metal stamp., press. & coat.)	3	4	8334-258	WIRE-CRIMPING-MACHINE OPERATOR (metal fab., n.e.c.; wire prod.)	3	4
8334-234	SHEAR OPERATOR, AUTOMATIC (metal stamp., press. & coat.)	3	4	8334-262	BALE-TIE-MACHINE OPERATOR (wire prod.)	3	4
8334-238	SLITTING-MACHINE OPERATOR (metal stamp., press. & coat.)	3	4	8334-266	BELL SPINNER (misc. prod. fab., n.e.c.)	3	4
8334-242	TURRET-PUNCH-PRESS OPERATOR (metal stamp., press. & coat.)	3	4	8334-270	LEAD-FITTINGS FINISHER (metal fab., n.e.c.)	3	4
8334-246	HOOP MAKER, MACHINE (metal stamp., press. & coat.)	3	4				

C

		GED	SVP			GED	SVP
8334-290	KEG-MAINTENANCE MAN (metal stamp., press. & coat.)	3	4	8334-342	PRESS TENDER, PIERCE AND SHAVE (scient. & ind. equip., n.e.c.)	2	3
8334-294	BRAKE TENDER (metal stamp., press. & coat.)	3	4	8334-346	SPRING WINDER (metal fab., n.e.c.)	2	3
8334-298	SHEET-METAL-WORKING-MACHINE TENDER (metal stamp., press. & coat.)	3	4	8334-350	TURRET-PUNCH-PRESS TENDER, TAPE CONTROL (metal stamp., press. & coat.)	2	3
8334-302	SLIDE-FORMING-MACHINE TENDER (metal stamp., press. & coat.)	3	4	8334-354	DRUM STRAIGHTENER (metal stamp., press. & coat.)	2	2
8334-306	METAL-PIPE COMPRESSOR (metal stamp., press. & coat.)	3	3	8334-358	FORMING-ROLL TENDER (metal stamp., press. & coat.)	2	2
8334-310	SCRAP-METAL-SHREDDER TENDER (iron & steel)	3	3	8334-362	MULTI-OPERATION-FORMING-MACHINE TENDER (metal stamp., press. & coat.)	2	2
8334-314	HOOP BENDER (metal stamp., press. & coat.)	2	3	8334-366	POWER-PRESS TENDER (metal stamp., press. & coat.)	2	2
8334-318	WIRE-SCREEN CUTTER AND TRIMMER (wire prod.)	2	3	8334-370	SCROLL-MACHINE TENDER (struct., plate & ornam. metal)	2	2
8334-322	SCRAP-METAL-CRUSHER TENDER (iron & steel)	2	3	8334-374	SHADOW-MASK SHAPER (electronic equip.)	2	2
8334-326	BENDING-MACHINE TENDER (metal stamp., press. & coat.)	2	3	8334-378	SPINNING-LATHE TENDER, AUTOMATIC (metal stamp., press. & coat.)	2	2
8334-330	HYDRAULIC-CORRUGATING-MACHINE TENDER (metal fab., n.e.c.)	2	3	8334-382	STRIP-ROLL-FORMING-MACHINE TENDER (metal stamp., press. & coat.)	2	2
8334-334	MACHINE TENDER, NUT AND BOLT (wire prod.)	2	3	8334-386	TWISTING-MACHINE TENDER (struct., plate & ornam. metal)	2	2
8334-338	POWER-SHEAR TENDER (metal stamp., press. & coat.)	2	3	8334-390	KNURLING-MACHINE FEEDER (misc. prod. fab., n.e.c.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 347	I 56	4-3	7-5	910	0Y1	
		4	<u>3</u>	<u>2</u>						4						91		
B	4	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	5	M-H 47	I 56	3	5-4	91	0Y	
	3			<u>4</u>	<u>4</u>	5	<u>4</u>			5							0Y2	
C	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 47	I 5	3-2	4-2	319	2Y	
			5		<u>3</u>				<u>4</u>	4							23Y	

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand metal properties and metalworking methods and to follow work instructions furnished in written or diagrammatic form;
- spatial perception to visualize the shape of finished products from drawings or work orders for workers in Clusters A and B, and also for workers in Cluster A to visualize the relationship of parts when setting up machines;
- form perception to examine and measure finished workpieces for conformance to specifications;
- eye-hand-finger co-ordination and manual dexterity to position workpieces, to handle machine controls and to use measuring instruments and hand tools;
- sufficient strength to perform medium to heavy work, requiring the lifting of materials, parts and tools and the pushing of hand trucks;

- near visual acuity and depth perception to perform activities such as setting up machines, aligning workpieces, reading measuring instruments and examining products for defects;
- capacity to work in proximity to loud noises, vibrations and hazards such as moving machine parts, hot metal and sharp metal objects; and for some occupations there is possibility of injury from lifting heavy objects; or for 8334-270 LEAD-FITTING FINISHER, there is possibility of lead poisoning.

Workers in Cluster A also require:

- numerical ability to make computations for machine setups and to lay out dimensions on workpieces;
- finger dexterity to hold and align small parts when setting up machines and to use micrometers and other measuring instruments quickly and accurately;
- ability to stoop, kneel or crouch when setting up metalworking machines.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to twelve years of general education;
- six months to four years of combined on-the-job training and related experience as a machine operator or tender, depending on the complexity of the occupation.

B

- nine to ten years of general education;
- three months to one year of combined on-the-job training and related experience.

C

- seven to ten years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to higher skilled occupations within their individual cluster, and with some additional training, advancement may be from Cluster C to B and to A. Workers with supervisory potential may advance to appropriate occupations in Chapter 8330, FOREMEN, METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to occupations requiring similar skills within their individual cluster, or to other appropriate occupations in Minor Group 833, METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried out in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally for Cluster C:

- routine, concrete and organized work.

Temperaments

A and B

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

Additionally, for Cluster A:

- a variety of duties often characterized by frequent change.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

WELDING AND FLAME CUTTING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with joining, cutting and surfacing ferrous and non-ferrous metal parts or structures using welding, brazing, soldering, lead-burning or flame-cutting techniques. Worker functions include: setting up, operating or tending machines and equipment to fuse, bond or cut metal; manipulating and guiding welding torch, gun, electrode, or fuller rod along joint or seam at proper rate and angle; working precisely to control heat during fusing, bonding or cutting operations; analyzing and compiling data from drawings, work orders or specifications to determine layout, dimensions and appropriate assembly methods; and comparing bead size, penetration and other characteristics of finished joints to established standards. Work activities include: cleaning workpieces by chipping, grinding, brushing or degreasing; laying out and marking weld points or cutting lines; positioning and securing workpieces in preparation for fabrication or repair work; selecting appropriate electrodes, filler rods, torch tips or related apparatus; and moving controls to start, stop and adjust equipment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP
8335-334	WELDING TECHNICIAN (mach., weld. & forg.)	4	7

B

		GED	SVP			GED	SVP
8335-194	BRAZING-MACHINE SET-UP MAN (mach., weld. & forg.)	4	7	8335-114	WELDER FITTER (mach., weld. & forg.)	4	7
8335-110	WELDER SET-UP MAN, RESISTANCE (mach., weld. & forg.)	4	7	8335-118	WELDER, TOOL AND DIE (mach., weld. & forg.)	4	7

C

		GED	SVP			GED	SVP
8355-122	WELDER, PRESSURE VESSELS (mach., weld. & forg.)	3	7	8335-198	INDUCTION-BRAZER OPERATOR (mach., weld. & forg.)	3	5
8335-126	WELDER, COMBINATION (mach., weld. & forg.)	3	7	8335-202	BRAZER, GAS (mach., weld. & forg.)	3	5
8335-130	WELDING-MACHINE OPERATOR, GAS-SHIELDED ARC (mach., weld. & forg.)	3	6	8335-146	TACK WELDER, ASSEMBLER (mach., weld. & forg.)	3	5
				8335-150	WELDER, GAS-SHIELDED ARC (mach., weld. & forg.)	3	5
8335-134	WELDING-MACHINE OPERATOR, SUBMERGED ARC (mach., weld. & forg.)	3	6	8335-154	WELDER, SUBMERGED ARC (mach., weld. & forg.)	3	5
8335-138	WELDER, ARC (mach., weld. & forg.)	3	6	8335-266	LEAD BURNER (mach., weld. & forg.)	3	4
				8335-206	BRAZER, FURNACE (mach., weld. & forg.)	3	4
8335-142	WELDER, GAS (mach., weld. & forg.)	3	6	8335-210	BRAZING-MACHINE OPERATOR (mach., weld. & forg.)	3	4
8335-298	FLAME-CUTTING-MACHINE OPERATOR (mach., weld. & forg.)	3	5	8335-158	WELDER, RESISTANCE, BUTT (mach., weld. & forg.)	3	4
8335-302	FLAME-CUTTING TRACER- MACHINE OPERATOR (mach., weld. & forg.)	3	5	8335-162	WELDER, RESISTANCE, SPOT (mach., weld. & forg.)	3	4
				8335-306	ARC CUTTER (mach., weld. & forg.)	3	4

CHAPTER 8335

		GED	SVP			GED	SVP
8335-310	FLAME CUTTER, HAND (mach., weld. & forg.)	3	4	8335-338	METAL STRAIGHTENER AND HEATER (mach., weld. & forg.)	3	4
				8335-214	SOLDERER (mach., weld. & forg.)	3	4*
D							
		GED	SVP			GED	SVP
8335-166	WELDER, PRODUCTION LINE (mach., weld. & forg.)	2	4	8335-170	RESISTANCE-WELDER TENDER (mach., weld. & forg.)	2	3
8335-270	BATTERY-LEAD-BURNER, MACHINE (mach., weld. & forg.)	3	3	8335-234	SIDE-SEAM TENDER (metal stamp., press. & coat.)	2	3
8335-274	BATTERY-LEAD BURNER (mach., weld. & forg.)	2	3	8335-342	WELDER HELPER (mach., weld. & forg.)	2	3
8335-218	BODY SOLDERER (motor vehicle)	2	3	8335-238	SOLDERER, ASSEMBLER (mach., weld. & forg.)	2	2
8335-314	FLAME CUTTER, SCRAP (mach., weld. & forg.)	2	3	8335-242	SOLDERER-DIPPER (mach., weld. & forg.)	2	2
8335-222	SOLDERER, JEWELLERY (jewellery & precious metal prod.)	2	3	8335-174	WELDER, RESISTANCE, HAND (mach., weld. & forg.)	2	2
8335-226	INDUCTION BRAZER, PRODUCTION (mach., weld. & forg.)	2	3	8335-246	TYPE-SOLDERING-MACHINE TENDER (mach., weld. & forg.)	2	2
8335-230	JEWELLERY-SOLDERING- MACHINE TENDER (jewellery & precious metal prod.)	2	3	8335-346	MACHINE FEEDER (mach., weld. & forg.)	2	2
				8335-278	BATTERY-LEAD-BURNER HELPER (mach., weld. & forg.)	2	2

QUALIFICATIONS PROFILES

Aptitudes													PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	5	3	L 457	I 567	4	7	791	0Y941	
B	<u>3</u>	3	3	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	3	M 347	B 567	4	7	91	Y04	
										4	4							
C	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	3	M-H 347	B 567	3	7-4	91	Y0	
			3		<u>4</u>	5	<u>4</u>			4	4							
										5								
D	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	S-M 47	B 67	3-2	4-2	391	2Y	
			5		<u>3</u>		<u>3</u>			4	3						23Y	

APTITUDES AND CAPACITIES

Workers in these clusters require:

A and B

- learning ability to understand the properties of various metals and the effects of expansion and shrinkage on metal due to heat, and to comprehend and apply various methods and techniques of welding, brazing, soldering and flame cutting;
- numerical ability for 8335-334 WELDING TECHNICIAN, to rapidly and accurately apply shop mathematics when laying out work or developing set-up data;
- spatial perception to visualize from drawings and specifications, the relationships and arrangements of parts and assemblies to be joined;
- form perception to discern slight differences in shapes, dimensions, alignment and filler-metal application;
- eye-hand co-ordination to manipulate machine controls, electrodes, torch or filler rod quickly and accurately during setting up, welding, brazing and cutting operations;
- ability to move the fingers and manipulate valves, dials and torch

tips when setting up and adjusting welding, brazing and cutting equipment or machines;

- manual dexterity to move the hands easily and skilfully when positioning workpieces and manipulating electrodes or torches, sometimes employing a special weaving motion during fusing, bonding or cutting operations;
- colour discrimination to recognize colour-coded metals and welding rods, and ferrous metals by grinder-spark tests, flame temperature, and colour differences between hot and molten metal at time of bonding or fusing;
- strength to perform medium to heavy work requiring frequent lifting of workpieces weighing up to seventy-five pounds;
- capacity to work in stooping, crouching, kneeling or reaching positions, when performing horizontal, vertical or overhead welds;
- capacity to work, usually inside, while exposed to loud noises from welding and hammering operations;
- capacity to detect differences in welding or cutting performance from

the sounds of the cutting torch and to detect dampness in certain electrode coatings by excessive sputter during arc welding;

- adaptability to working in conditions where there are physical hazards, from hot metal, showering sparks, and fumes produced by chemical reactions.

C and D

- learning ability to understand and apply electric arc, resistance and gas welding, brazing, soldering and cutting methods, procedures and instructions;
- spatial perception to visualize, from drawings and specifications, the relationships and arrangements of parts to be joined;
- form perception to discern pertinent detail in bead sizes, penetration and evenness of weld;
- eye-hand co-ordination to quickly and accurately manipulate machine controls, electrode, torch or filler rod during welding, brazing or cutting operations;

- manual dexterity to move the hands easily and skilfully when positioning workpieces, striking an arc and manipulating electrodes or torches;
- colour discrimination to recognize similarities and differences in shades of colour, especially during flame adjustment and grinder spark tests;
- strength to perform medium to heavy work requiring frequent lifting of workpieces and materials weighing up to fifty pounds;
- capacity to work in stooping, crouching, kneeling or reaching positions when performing horizontal, vertical or overhead welds;
- capacity to work, usually inside, while exposed to loud noises from welding, brazing and hammering of metal;
- adaptability for working in conditions subject to physical hazards, from hot metal, showering sparks, and noxious fumes.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- twelve years of general education;
- a two-year program of studies at a college of applied arts and technology, and two or more years of on-the-job training; or
- a three to four-year apprenticeship combined with a course of studies established through the Canadian Welding Bureau;
- completion of examination and registration requirements.

B

- ten to twelve years of general education;
- a three to four-year apprenticeship program combined with regular periods of full-time studies at a vocational school; or

- a six months to one year course in welding at a vocational or trade school and two to three years of on-the-job training;
- completion of examination and registration requirements.

C

- eight to ten years of general education;
- six months to four years of on-the-job training with additional vocational courses, depending on the occupation;
- completion of examination and registration requirements, depending on the occupation.

D

- eight to nine years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, some workers in Clusters B and C may advance to 8335-334 WELDING TECHNICIAN. Similarly, with additional training, experienced workers in Clusters D and C may advance to higher skilled occupations in Cluster B. Those with supervisory potential may advance to 8330-126 FOREMAN, WELDING AND FLAME CUTTING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to occupations requiring similar skills within the individual cluster, or with limited additional training to occupations in other clusters in the chapter. Experienced workers may also transfer to occupations in quality control work, such as 8336-110 WELD INSPECTOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally,

for Welding Technicians:

- scientific and technical work.

for Cluster D:

- routine, concrete and organized work.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against sensory or judgmental criteria;
- the direction, control and planning of an entire activity or the activities of others;
- a variety of duties often characterized by frequent change.

B and C

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

Additionally, for Cluster C:

- the direction, control and planning of an entire activity or the activities of others.

D

- repetitive or short cycle operations, carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

INSPECTING AND TESTING OCCUPATIONS, METAL SHAPING AND FORMING, EXCEPT MACHINING

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the shaping, forming and joining of metal objects, involving a variety of techniques except those of metal-machining. Worker functions include: manipulating test instruments and inspection devices to confirm suitability of materials or work in progress; working precisely to accurately measure layouts or confirm alignment of structures and parts; compiling inspection and test information and analyzing data from drawings or specifications; and comparing quality of materials and finished products to specified standards. Work activities include: inspecting and testing welded joints for defects; verifying dimensional accuracy of forgings, plates and structural shapes; recording test results; and recommending changes in machine setup or assembly procedures to improve products.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8336-110	WELD INSPECTOR (mach., weld. & forg.)	4	7	8336-118	INSPECTOR, FORGINGS (mach., weld. & forg.)	4	6
8336-114	INSPECTOR, METAL FABRICATING (any ind.)	4	7	8336-122	INSPECTOR, LEAF SPRINGS (mach., weld. & forg.)	3	5

B

		GED	SVP			GED	SVP
8336-126	INSPECTOR, METAL-PARTS (any ind.)	2	4	8336-134	INSPECTOR, WIRE PRODUCTS (wire prod.)	2	4
8336-130	INSPECTOR, TIN CAN (metal stamp., press. & coat.)	2	4	8336-138	SPRING TESTER (mach., weld & forg.; metal fab., n.e.c.)	2	4
				8336-142	CHAIN-TESTING-MACHINE TENDER (mach., weld. & forg.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>4</u>	4	<u>4</u>	5	4	M-H 347	I-B 567	4-3	7-5	197	0Y	
		4	4	3	<u>3</u>						5		I 57			19		
B	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	4	4	M 47	I 56	2	4-2	139	0Y2	
		3	3	3	<u>4</u>					5	5							

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand the principles of metal shaping and forming, methods of assembly, use of inspection and test equipment, and to interpret drawings, specifications and quality-control procedures to carry out inspecting and testing activities;
- numerical ability to verify measurements of metal parts or products for conformance to layouts and specifications;
- spatial perception to inspect three-dimensional finished parts or assemblies from drawings and specifications;

- form perception to make visual comparisons of slight differences in welded joints, finished metal products and surfaces of forgings to detect flaws and to determine need for machine adjustments;
- eye-hand co-ordination and manual dexterity to inspect metal parts and products for defects, using a variety of measuring devices, and to place or remove items from test equipment or fixtures.

B

- learning ability to understand and carry out detailed but uninvolved written or oral quality-control instructions;
- form perception to make visual comparisons of slight differences in

welded joints, finished metal products, surfaces of forgings and plated coatings to detect flaws and to determine the need for machine adjustments;

- eye-hand co-ordination and manual dexterity to inspect metal parts and products or coated surfaces for defects, use a variety of measuring devices and place or remove items from test equipment or fixtures.

Workers in these clusters also require:

- physical fitness and sufficient strength to perform medium to heavy work requiring frequent lifting of items weighing up to fifty pounds and frequent standing and walking to carry out quality-control activities;
- agility to work in awkward positions, around machines or assemblies involving stooping or kneeling when inspecting and testing parts or products;

- physical ability to extend the hands and arms when placing metal parts or products in test equipment, inspecting parts for defects and when verifying dimensions of workpieces;
- visual acuity, near and far, to inspect parts, assemblies or coated metal for defects, and to read gauges and markings on test equipment or instruments;
- capacity to work while exposed to continual loud noise from metal shaping and forming machines and equipment in the vicinity of inspection and test areas;
- adaptability to conditions involving possible injuries such as burns from hot metal, cuts from tinplate, eye injury from welding flash and possible skin disorders from chemicals, and exposure to fumes and odours.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten years of general education;
- one to two or more years of experience as a qualified worker in the

field of work involved, supplemented with vocational courses or on-the-job training in inspection techniques.

B

- eight years of general education;
- up to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in these clusters with supervisory ability may advance to foremen of quality-control departments, or to appropriate occupations in Volume I, Unit Group 8330, FOREMEN, METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING. See Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

With limited additional training, transfer may be possible to occupations requiring similar skills in other chapters; for example 8146-126 METAL PROCESSING INSPECTOR; 8146-138 CASTING INSPECTOR; and 8146-150 TINPLATE INSPECTOR AND GRADER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- activities that are non-social in nature and are carried on in relation to metal processes, machines and techniques.

Additionally, for workers in Cluster B:

- activities of a routine, concrete and organized nature.

Temperaments

- the evaluation of information against measurable or verifiable criteria, to arrive at decisions;
- the precise attainment of set limits, tolerances or standards.

Additionally, for workers in Cluster B:

- repetitive or short cycle operations carried out according to set procedures or sequences.

BOILERMAKERS, PLATERS AND STRUCTURAL-METAL WORKERS**WORK PERFORMED**

This chapter includes occupations concerned with fabricating, assembling and repairing boilers and metal plates and structural parts for tanks, ships and other structures. Worker functions include: setting up, operating or tending heavy-duty metalworking machines such as shears, saws, rolls, brakes and presses; working to close tolerances when fitting, aligning and fastening parts together; compiling information from drawings or specifications to determine layouts and the sequence of operations for assembling metal structures; comparing shape and dimensions of completed workpieces to drawing specifications; and manipulating cutting torches, levels, rules, wedges, bars, jacks and hammers to cut, bend, shape and align steel plates. Work activities include: marking dimensions and reference lines on workpieces; preheating workpieces using hand torch or furnace; cutting, bending, rolling, fitting, welding or riveting metal plates, tubes or beams; and assembling boilers in shop or on site.

LIST OF OCCUPATIONAL TITLES**A**

		GED	SVP			GED	SVP
8337-110	BOILERMAKER (struct., plate & ornam. metal)	4	7	8337-130	METAL FORMER, HAND (struct., plate & ornam. metal)	4	6
8337-114	STRUCTURAL-METAL FABRICATOR (struct., plate & ornam. metal)	4	7	8337-134	HEAVY-DUTY PRESS-SET-UP OPERATOR (struct., plate & ornam. metal)	4	6
8337-118	BOILERMAKER, ERECTION AND REPAIR (struct., plate & ornam. metal)	4	7	8337-138	METAL-FORMING MACHINE-SET- UP OPERATOR (struct., plate & ornam. metal)	4	6
8337-122	FITTER, STRUCTURAL METAL (struct., plate & ornam. metal)	4	7	8337-142	ORNAMENTAL-METAL WORKER (struct. plate & ornam. metal)	4	6
8337-126	LAY-OUT-MAN, STRUCTURAL METAL (struct., plate & ornam. metal)	4	7				

B

		GED	SVP			GED	SVP
8337-146	SLIP-ROLL OPERATOR, HEAVY DUTY (metal stamp., press. & coat.)	4	5	8337-150	STEEL-PLATE SHAPER (ship & boat bldg.)	3	6
				8337-154	ANGLE-SHEAR OPERATOR (struct., plate & ornam. metal)	3	5

C

		GED	SVP			GED	SVP
8337-158	BOILERMAKER HELPER (struct., plate & ornam. metal)	2	4	8337-166	METAL-FORMER HELPER, HAND (struct., plate & ornam. metal)	2	3
8337-162	METAL-FORMING-MACHINE TENDER (struct., plate & ornam. metal)	2	4	8337-170	BOILERMAKER HELPER, ERECTION AND REPAIR (struct., plate & ornam. metal)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>2</u>	4	4	M-H 2347	I 56	4	7-6	901	0Y1
		4		<u>3</u>				4	<u>3</u>		5						
B	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	5	H 347	I-B 56	4-3	6-5	91	0Y2
			3			5					4						
C	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	4	5	H 2347	I 56	2	4-3	193	2Y0 23Y
			5			5	<u>4</u>										

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand the physical properties of structural metal and methods of assembly and reasoning ability to determine layouts and to carry out procedures for the fabrication of the part or product;
- numerical ability to accurately use geometry, trigonometry and shop mathematics to plan and develop structural metal layouts;
- spatial perception to visualize the interrelationship of parts and the size and shape of the finished product from drawings, and to design and construct templates and fixtures;
- form perception to make visual comparisons and see slight differences in size or shape of structural metal components or installations when examining them for conformance to specifications;
- eye-hand-finger co-ordination and finger dexterity to precisely mark procedural symbols, reference points and dimensions on structural shapes, plates and tubes, and to position and trace around patterns and templates;
- manual dexterity to position, align and fit parts together preparatory to final assembly.

B

- learning ability to understand the physical properties of metal and to operate heavy-duty metalworking machines and oxy-acetylene torches to cut, bend or shape metal stock;
- spatial perception to use heavy-duty metalworking machines or oxy-acetylene torches to bend, cut or shape metal plates, sheets or bars into arcs, cylinders, cones or curved structural shapes in accordance with two dimensional drawings and templates;
- form perception to visualize slight differences in size or shape of structural metal which would indicate the need for machine adjustments or further working to obtain the desired shape;
- eye-hand-finger co-ordination to use measuring and marking instruments, to handle machine controls and to position templates on workpieces;
- manual dexterity to position workpieces in machines and to manipulate acetylene torches when applying heat to specified areas of steel plate.

C

- learning ability to understand and carry out detailed but uninvolved structural metalworking instructions;
- spatial perception to visualize the size and shape of the final product when helping to position structural parts for assembly, or when helping to bend workpiece to a specified shape;
- form perception to examine and measure finished workpiece for conformance to specifications;
- eye-hand-finger co-ordination to position workpieces in machines, to handle machine controls and to use measuring instruments;
- manual dexterity to remove burrs, sharp edges or scale from workpieces, using hand and power tools.

Workers in these clusters also require:

- sufficient strength to perform medium to heavy work requiring frequent lifting of items weighing from twenty to fifty pounds, with the occasional lifting of items weighing up to one hundred pounds and constant standing when laying out, cutting and assembling metal components and products, operating or working around machines, and shaping plate metal to desired contours;
- agility to climb ladders or work on scaffolds when fitting together large assemblies or installing assemblies;
- physical ability to work in awkward positions, such as stooping, kneeling or crouching, as well as the ability to work in confined areas, and to extend the hands and arms to work around machines and position workpieces in them, to lay out marking lines on metal, to position, align or assemble metal parts, and to attach or remove hook of hoist from structural assemblies;
- near visual acuity to read blueprints and markings on measuring instruments, to follow cutting lines or to align lay-out markings on workpiece with dies or cutting blades of machines, to set up metalworking machines according to drawings, layouts and templates, or to apply heat to remove welding distortions from plate metal;
- capacity to work while exposed to continual loud noise from metalworking machines and hammering on metal;
- adaptability to physical hazards or injury from moving mechanical parts of metalworking machines; cuts, bruises or burns when handling, cutting out, or assembling structural metal; and possible falls when working on ladders or scaffolds.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to eleven years of general education;
- a three to four-year apprenticeship program; or
- up to four years of on-the-job training; or
- several years of on-the-job training combined with part-time studies;

B

- eight to ten years of general education;
- up to two years of on-the-job training.

C

- seven to eight years of general education;
- up to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for workers in this chapter may be from occupations in Clusters C and B to appropriate occupations requiring higher skills in Cluster A. Experienced workers in this chapter with supervisory potential may advance to 8330-110 FOREMAN, BOILERMAKERS, PLATERS AND STRUCTURAL METAL WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in these clusters may transfer to occupations within their respective clusters, or to appropriate occupations requiring similar skills in Minor Group 833, METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING. Transfer may also be to occupations requiring similar skills in other chapters such as Chapter 8523, INDUSTRIAL, FARM, CONSTRUCTION AND OTHER MECHANIZED EQUIPMENT AND MACHINERY FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C., and 8793, STRUCTURAL-METAL ERECTORS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to structural metal processes, machines and techniques;
- dealing with things and objects.

Additionally,

for Cluster A:

- activities leading to satisfaction from tangible results.

for Cluster C:

- routine, concrete and organized work.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria, to arrive at decisions, such as measuring completed work for conformance to specifications;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B

- the evaluation of information against measurable or verifiable criteria, to arrive at decisions, such as selecting, aligning and fastening specified cutting blades or dies in machines;
- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

GROUP 8339

METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING, N.E.C.

This group includes occupations, not elsewhere classified, concerned with shaping, forming and joining a wide variety of metal parts and products, using any combination of forging, pressing, winding, rolling, punching, shearing, welding, brazing and soldering techniques.

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES	Aptitudes											PA	EC	GED	SVP	Ints. Temps.	
	G	V	N	S	P	Q	K	F	M	E	C						
8339-110 ART-METAL WORKER (metal fab., n.e.c.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>2</u>	5	3	M 47	I 56	4	7	901	Y091
8339-112 SAMPLEMAKER, LEAF SPRINGS (metal fab., n.e.c.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I	4	7	901	0Y
8339-114 LIGHTING-FIXTURE MAKER (mach., weld. & forg.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	L 47	I 56	4	7	901	Y0
8339-118 GRID-MACHINE JOB SETTER (wire prod.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	4	6	91	Y0
8339-122 LINK-WIRE-MACHINE SET-UP OPERATOR (metal fab. n.e.c.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 5	4	6	91	Y0
8331-114T BLACKSMITH (mach., weld. & forg.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>2</u>	<u>4</u>	<u>2</u>	<u>4</u>	<u>3</u>	H 457	I 3567	3	7	109	10Y4
8339-126 LOOM SETTER, WIRE WEAVING (wire prod.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 34567	I 5	3	6	910	Y0
8339-130 METAL-CAN MACHINE SET-UP MAN (metal stamp., press. & coat.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 56	3	6	910	Y0
8339-134 AIRCRAFT PIPE AND TUBE FITTER (air & space-craft)	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 2347	I 6	3	6	91	0Y
8339-138 ORGAN-PIPE MAKER, METAL (misc. prod. fab., n.e.c.)	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 5	3	6	19	Y0
8339-142 ORGAN-BLOWER MAKER (misc. prod. fab., n.e.c.)	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 47	I 56	3	6	91	Y0
7187-118T HORSESHOER (agric.)	3	4	4	4	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M 346	I 6	3	6	13	Y9
8339-146 METALWORKING-MACHINE SET-UP OPERATOR (metal stamp., press. & coat.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 34567	I 56	3	5	91	Y0
8339-150 RUBBER-FOOTWEAR-PARTS DIE MAKER (mach., weld. & forg.)	3	4	4	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I 6	3	5	91	Y0
8339-152 PULPSTONE-CAGE BUILDER (metal fab., n.e.c.)	3	4	4	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	4	VH 47	I 56	3	5	91	Y0
8339-154 SAFETY-PIN-MACHINE SET-UP OPERATOR (misc. prod. fab., n.e.c.)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 56	3	5	91	Y0
8339-158 WIRE WEAVER, CLOTH AND SCREEN (wire prod.)	<u>3</u>	<u>3</u>	4	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 47	I 5	3	5	91	Y0
8339-162 STRANDING-MACHINE OPERATOR (wire prod.)	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 47	I 56	3	5	91	Y0
8339-166 BRAZER AND HAMMERER (misc. prod. fab., n.e.c.)	3	4	4	<u>4</u>	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	4	M 47	I 6	3	5	91	Y0
8339-170 WIRE WEAVER, BENCH LOOM (wire prod.)	3	3	3	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 47	I 56	3	5	91	Y0
8339-174 CABLE SWAGER AND STRETCHER (wire prod.)	3	4	4	<u>3</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 47	I 6	3	5	91	Y0
8339-178 LAY-OUT MARKER (metal stamp., press. & coat.; struct., plate & ornam. metal)	4	4	3	4	4	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 347	I 6	3	5	19	2Y
8339-182 WIRE-ROPE-SLING AND CABLE SPLICER (wire prod.)	4	4	4	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 47	I 6	3	5	19	2Y
8339-186 EMBOSsing-MACHINE OPERATOR (metal stamp., press. & coat.)	4	4	4	4	<u>4</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 47	I 56	3	4	931	Y0

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8339-190	ART-METAL-WORKER HELPER (metal fab., n.e.c.)	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	4	M 47	I 56	3	4	139	2Y
8339-194	FIXTURE MAKER, PLATING EQUIPMENT (metal fab., n.e.c.)	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	4	M 47	I 5	3	4	139	2Y
8339-198	REINFORCING-CAGE MAKER (wire prod.)	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	4	H 347	I 6	3	4	139	2Y
8339-202	STRAIGHTENER, HAND (mach., weld. & forg.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 47	I 5	3	4	139	2Y
8339-206	REINFORCING-CAGE-WINDING MACHINE OPERATOR (wire prod.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	4	H 4	I 56	3	3	931	Y0
8339-210	TUBE BENDER, HAND (metal stamp., press. & coat.)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 47	I	3	3	139	2Y
8339-214	BARBED-WIRE-MACHINE TENDER (wire prod.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 4	I 56	3	3	319	2Y
8339-218	SLIDE-FASTENER-LINK-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	M 347	I 56	3	3	139	20Y
8339-222	FITTER, METAL FABRICATING (metal fab., n.e.c.)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 47	I 6	2	3	13	20Y
8339-226	AUTOMOBILE-BUMPER STRAIGHTENER (motor vehicle)	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	H 47	I 56	2	3	13	23Y
8339-230	FITTER HELPER (mach., weld. & forg.; struct., plate & ornam. metal)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	5	5	H 234	I 56	2	3	319	23Y
8339-234	WIRE BENDER, HAND (wire prod.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	M 47	I	2	3	31	23Y
8339-238	WIRE-FRAME LAMP-SHADE MAKER (wire prod.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4	L 47	I	2	3	319	23Y
8339-242	CHAMFERING-MACHINE TENDER (explosives)	4	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I 56	2	3	319	20Y
8339-246	COIL-REWIND-MACHINE TENDER (metal stamp., press. & coat)	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	4	5	M 347	I 6	2	3	319	20Y
8339-250	COIL-SPRING-ASSEMBLY-MACHINE TENDER (metal fab., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	5	L 47	I 5	2	3	319	23Y
8339-254	LINK-WIRE-MACHINE TENDER (furn.; wire prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 47	I 5	2	3	319	23Y
8339-258	POCKET-SPRING-MACHINE TENDER (metal fab., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 4	I	2	3	319	23Y
8339-262	SPIRAL WEAVER (wire prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 4	I 5	2	3	319	23Y
8339-266	CHAIN-MAKER FEEDER (wire prod.)	4	4	5	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	4	5	M 4	I 5	2	3	319	23
8339-270	METAL-FABRICATING-SHOP HELPER (metal stamp., press. & coat.)	4	4	5	4	4	5	<u>3</u>	<u>4</u>	<u>3</u>	4	5	H 347	I 56	2	3	31	23
8339-274	WIRE-BASKET MAKER (wire prod.)	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 4	I	2	2	319	23
8339-278	BULLET-SHAPING-MACHINE TENDER (explosives; metal fab., n.e.c.)	4	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 347	I 5	2	2	319	20Y
8339-282	EMBOSSING-MACHINE TENDER (explosives)	4	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I	2	2	319	23Y
8339-286	KNITTER, WIRE-MESH (wire prod.)	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 5	2	2	319	23Y
8339-290	METAL-SPONGE MAKER (wire prod.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	319	23Y
8339-294	INDUSTRIAL-KNITTING-NEEDLE MACHINE FEEDER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I 5	2	2	319	23
8339-298	STRANDING-MACHINE-OPERATOR HELPER (wire prod.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	M 47	I 56	2	2	31	23
8339-302	WIRE-WEAVER HELPER (wire prod.)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5	H 347	I 5	2	2	319	23Y

WOOD PATTERNMAKING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with making wooden patterns used to form sand moulds for casting metal articles and making full-size or scale models of mass-produced items. Worker functions include: working to close tolerances when laying out designs for patterns and operating woodworking machines; compiling and analyzing information from drawings or finished articles to determine patternmaking requirements; manipulating measuring instruments and hand and power tools to lay out work and shape wood stock; and comparing shape and dimensions of finished workpieces with specifications. Work activities include: marking, cutting, shaping, fitting and fastening parts together to construct patterns or models; and finishing surfaces by sanding and applying shellac, lacquer or paint.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8351-110	PATTERNMAKER, WOOD (woodworking)	4	8	8351-118	MODEL MAKER, LAST (woodworking)	4	6
8351-114	MODEL MAKER, WOOD (woodworking)	4	7	8351-122	HAT-BLOCK MAKER (woodworking)	3	6

B

		GED	SVP
8351-126	TRIMMER, LAST (plastic prod.; woodworking)	3	4

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>2</u>	5	4	L-M 47	I 567	4-3	8-6	901	Y0
				<u>3</u>													
B	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I 57	3	4	91	Y0

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to analyze and study engineering drawings and specifications and in some occupations, use a knowledge of moulding and casting techniques, to design and construct wooden patterns and models, with a variety of precision woodworking hand tools and machines;
- numerical ability to apply general shop mathematics to the preparation of plans and making of layouts for patterns or models;
- spatial perception to visualize the completed pattern or model from two-dimensional drawings and to construct the several parts of models to fit together to form the desired end product.

B

- learning ability to understand the techniques of making wooden lasts and to follow drawings and instructions to obtain the desired size and finish;
- spatial perception to visualize specified contour and size of shoe lasts.

All workers in this chapter require:

- form perception to discern imperfections in finish and differences in dimensions or shape of finished articles from templates or other standards;
- eye-hand-finger co-ordination to control operation of woodworking machines and to use measuring equipment with accuracy;
- finger dexterity to manipulate hand tools or objects with the fingers when trimming, smoothing and shaping surfaces;
- manual dexterity to skilfully guide or move and turn parts or guide cutting tools while using woodworking machines, and to plane, shave, file, scrape and sand wood stock to specified shape;
- strength to perform light to medium work requiring occasional lifting of up to fifty pounds;
- near visual acuity to read drawings, accurately measure dimensions of workpieces and to follow outlines when cutting parts out of wood stock;
- capacity for working adjacent to very noisy woodworking machines,

in a dust laden atmosphere and to adapt to risk of physical injuries, such as cuts, bruises or loss of fingers.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- A**
- ten to twelve years of general education;
 - one to four years of on-the-job training depending on the complexity of the occupation;

- for 8351-110 PATTERNMAKER, WOOD, the requirement is a four to five-year apprenticeship program.

- B**
- eight to ten years of general education;
 - up to six months of related experience and on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Last Trimmers may advance to 8351-118 MODEL MAKER, LAST. Experienced workers in this chapter with supervisory potential may advance to 8350-118 FOREMAN, WOOD PATTERNMAKING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in Cluster A may transfer to appropriate occupations requiring similar skills in Chapter 8395, PATTERNMAKERS AND MOULD-MAKERS, N.E.C.; for example, 8395-118 MODEL MAKER, and 8395-150 TEMPLATE MAKER. Last Trimmers may, with limited additional training, transfer to occupations in Chapter 8357, WOOD SANDING OCCUPATIONS, for example, 8357-110 CONTOUR-SANDER OPERATOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for workers in Cluster A:

- activities leading to satisfaction from tangible results, such as construction of wooden patterns or models from drawings.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- situations involving the evaluation of information against measurable criteria.

WOOD SAWING AND RELATED OCCUPATIONS, EXCEPT SAWMILL

WORK PERFORMED

This chapter includes occupations concerned with sawing wood stock and paperboard or other non-metallic materials to specified shape or dimensions in a factory or shop, excluding sawing of lumber from logs, and production of veneer and plywood sheets. Worker functions include: operating or tending powered band, circular, or reciprocating saws to cut lumber or wood stock according to customer's order or production requirements; and comparing dimensions of cut stock to specifications. Work activities include: adjusting machine stops, guides and saw blade according to cut to be made; selecting, measuring and marking stock; moving controls to start and stop machine; and replacing worn or defective saw blades.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8353-110	BAND-SCROLL-SAW OPERATOR (misc. prod. fab., n.e.c.; woodworking)	3	4	8353-126	STOCK CUTTER, WOOD (woodworking)	3	3
8353-114	JIGSAW OPERATOR (woodworking)	3	4	8353-130	CUT-OFF-SAW OPERATOR (any ind.)	2	3
8353-118	RESAW OPERATOR (woodworking)	3	4	8353-134	RADIAL-ARM-SAW OPERATOR (woodworking)	2	3
8353-122	VARIETY-SAW OPERATOR (woodworking)	3	4	8353-138	RIPSAW OPERATOR (woodworking)	2	3

B

		GED	SVP			GED	SVP
8353-142	HEADINGS SAWYER, COOPERAGE (woodworking)	2	3	8353-154	MITRE-SAW TENDER (woodworking)	2	2
8353-146	BAND-SAW-MACHINE TENDER (woodworking)	2	2	8353-158	SAWING-MACHINE TENDER (asbestos & min. wool)	2	2
8353-150	HOLE-SAW TENDER (woodworking)	2	2	8353-162	STAVE SAWYER (sawmill)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	4	4	4	3	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5		M 47	I 567	3-2	4-3	931	2Y0
										4								
B	4	4	4	4	<u>3</u>	5	<u>3</u>	4	<u>3</u>	5	5		L-M 47	I 567	2	3-2	391	23Y
				3	<u>4</u>					<u>3</u>								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand wood sawing operations and to operate or tend power saws, and to follow work orders and specifications;
- form perception to recognize differences in shape or dimensions of wood stock and to observe grain, knots and surface finish;
- eye-hand-finger co-ordination and manual dexterity to turn handwheels, change saws or to adjust saws or tables, and to hold and guide or turn wood stock against saw blade while following cutting outline;

- strength to perform light to medium work requiring lifting, carrying or pushing of wood stock weighing up to fifty pounds;
- near visual acuity to examine lumber for defects, to measure and mark locations for cutting, to adjust guides and to feed material into saws;
- capacity for working in the presence of intense and sustained noise from power saws and other woodworking machinery;
- adaptability to working in dusty conditions, while exposed to physical hazards that may result in injuries, such as cuts from exposed saw blades and bruises or fractures from handling lumber.

Workers in Cluster A also require:

- finger dexterity to set guides and stops at the desired length, width or angle of cut.

Workers in CLuster B also require:

- eye-hand-foot co-ordination to actuate control switches, pedals, and levers of saws.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;

- up to six months of on-the-job training which may include related experience on other woodworking machines.

B

- eight to ten years of general education;
- up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may advance to occupations requiring higher skills within their individual cluster, or from Cluster B to A. Experienced workers with supervisory potential may advance to 8350-126 FOREMAN, WOOD SAWING AND RELATED OCCUPATIONS, EXCEPT SAWMILL. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. With some additional training, advancement may also be to 8356-110 INSPECTOR, WOOD MACHINING.

Transfer

Transfer possibilities for workers in this chapter may be to occupations within their individual cluster or to other occupations requiring similar skills in other chapters, for example 8231-142 TRIMMING-MACHINE OPERATOR, 8239-130 SIZING-SAW TENDER, and 8355-150 DADO OPERATOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to machines, processes and techniques;
- activities of a routine, concrete and organized nature;
- dealing with things and objects.

Temperaments

A

- repetitive or short cycle operations performed according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria such as confirming dimensions of completed workpieces against specifications.

B

- repetitive or short cycle operations performed according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

PLANING, TURNING, SHAPING AND RELATED WOOD MACHINING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with machining wood to specified dimensions and shape to make wooden parts or products in a factory or in a shop. Worker functions include: operating woodworking machines to plane, turn, shape, mortise, route, bore or cut wood to specifications; tending machines that cut out or shape parts or articles, such as bowls, toothpicks and clothes hangers, in production quantities; and comparing measurements of finished items with those of samples, patterns, drawings or work orders. Work activities include: studying drawings to determine tooling required to produce specified products; positioning and securing workpiece in machine of feeding stock into machines; installing and adjusting cutters, guides, feed rollers, jigs and stops; and replacing worn or broken drills, cutters, knives and tool bits.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8355-110	WOODWORKING-MACHINE SET-UP OPERATOR (furn.; woodworking)	4	7	8355-158	LOUVER-ROUTER OPERATOR (woodworking)	3	4
8355-114	SMOKING-PIPE MAKER (misc. prod. fab., n.e.c.)	3	6	8355-162	PLANER OPERATOR (furn.; woodworking)	3	4
8355-118	BILLIARD-CUE MAKER (sport. & toy)	3	6	8355-166	SHAPER OPERATOR (furn.; woodworking)	3	4
8355-122	SPINDLE CARVER (furn.)	3	6	8355-170	SHAPER OPERATOR, AUTOMATIC (furn.; woodworking)	3	4
8355-126	BRIAR-BOWL TURNER (misc. prod. fab., n.e.c.)	3	5	8355-174	SPLITTING-MACHINE OPERATOR, CORK (woodworking)	3	4
8355-130	WOOD-TURNING-LATHE OPERATOR (furn.; woodworking)	3	5	8355-178	TENONER OPERATOR (furn.; woodworking)	3	4
8355-134	ADZING-AND-BORING-MACHINE OPERATOR (woodworking)	3	4	8355-182	TRIMMING-AND-BORING-MACHINE OPERATOR (furn.)	3	4
8355-138	BORING-MACHINE OPERATOR (furn.; woodworking)	3	4	8355-186	MORTISING-MACHINE OPERATOR (furn.; woodworking)	3	4
8355-142	CHUCKING-AND-BORING-MACHINE OPERATOR (furn.)	3	4	8355-190	WOODEN-BOWL-LATHE OPERATOR (woodworking)	2	4
8355-146	CHUCKING-MACHINE OPERATOR (furn.; woodworking)	3	4	8355-194	ROUTER OPERATOR (furn.; woodworking)	3	3
8355-150	DADO OPERATOR (furn.; woodworking)	3	4	8355-198	SWING-TYPE-LATHE OPERATOR (furn.; woodworking)	3	3
8355-154	DOVETAIL-MACHINE OPERATOR (furn.; woodworking)	3	4	8355-202	WOOD-CARVING-MACHINE OPERATOR (furn.; woodworking)	3	3
				8355-206	SHUTTLE MAKER (woodworking)	3	3

B

		GED	SVP			GED	SVP
8355-210	SMOKING-PIPE BURLER (misc. prod. fab., n.e.c.)	2	4	8355-222	BOWL-BLANK-BORING-AND-FINISHING-MACHINE OPERATOR (woodworking)	2	3
8355-214	PANEL-JOINTER-MACHINE TENDER (woodworking)	3	3	8355-226	CROZE-MACHINE OPERATOR (woodworking)	2	3
8355-218	WOODEN-BOWL-LATHE-BOTTOM MAN (woodworking)	2	3	8355-230	TOOTH-PICK-LATHE OPERATOR (woodworking)	2	3

		GED	SVP			GED	SVP
8355-234	COPY-LATHE TENDER (misc. prod. fab., n.e.c.; woodworking)	2	3	8355-262	GUN-STOCK FITTER (woodworking)	2	2
8355-238	DOWEL-MACHINE TENDER (woodworking)	2	3	8355-266	HEADING-MACHINE TENDER (woodworking)	2	2
8355-242	EMBOSSING-MACHINE TENDER (woodworking)	2	3	8355-270	SADDLE-MACHINE TENDER (furn.)	2	2
8355-246	LAMINATED-BOWL-MACHINE TENDER (woodworking)	2	3	8355-274	WOODEN-PRODUCTS-MACHINE TENDER (woodworking)	2	2
8355-250	RIP-AND-GROOVE-MACHINE TENDER (furn.)	2	3	8355-276	WOODEN-PRODUCTS-MACHINE FEEDER (woodworking)	2	2
8355-254	WOODENWARE CARVER, HAND (woodworking)	2	2	8355-280	PREFITTING-MACHINE FEEDER (woodworking)	2	2
8355-258	GUN-STOCK CHECKERER (woodworking)	2	2	8355-298	WOODWORKING-MACHINE FEEDER (furn.; woodworking)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 47	I 567	4-3	7-3	91	Y0	
	4			<u>4</u>	<u>4</u>			4	<u>2</u>	<u>4</u>	4							
B	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L-M 47	I 567	3-2	4-2	913	Y23	
			4							4	4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand the operation of woodworking machines and to apply woodworking procedures and techniques;
- spatial perception to visualize finished products from drawings and specifications;
- form perception to notice slight differences in size and finish of products when examining them for defects;
- eye-hand-finger co-ordination when operating machines such as planers, routers sanders and tenoners, and to use hand and power tools with precision and speed;
- manual dexterity to skilfully use hand tools when adjusting and operating machines and positioning workpieces;
- strength to lift and carry wood, tools and equipment weighing up to fifty pounds and to feed wood stock into machines;

- near visual acuity to set up and adjust machines, examine workpieces and make accurate measurements, and depth perception to safely feed wood stock into machines;
- capacity to work while exposed to intense noises from woodworking machines;
- capacity to work under dusty conditions while exposed to hazards such as cutting tools, rotating stock and flying wooden particles.

Workers in Cluster A also require:

- finger dexterity to manipulate adjusting screws and knobs when setting up woodworking machines and when measuring finished workpieces;
- eye-hand-foot co-ordination, depending upon equipment used, to depress foot pedals while simultaneously positioning or shaping workpieces.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;

- on-the-job training from three months to two years for most occupations, except for 8355-110 **WOODWORKING-MACHINE SET-UP OPERATOR**, which requires up to four years of experience and training.

B

- seven or eight years of general education;
- on-the-job training of from one to three months.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may, with experience and additional training, advance to occupations requiring higher skills within their individual cluster, or from Cluster B to A. Those with supervisory potential may advance to 8350-114 FOREMAN, PLANING, TURNING, SHAPING AND RELATED WOOD-MACHINING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to occupations requiring similar skills within this chapter, or with limited additional training, to appropriate occupations in other chapters, for example, 8356-110 INSPECTOR, WOOD MACHINING, or 8353-110 BAND-SCROLL-SAW OPERATOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, for example, confirming size and shape of machined articles against specifications.

B

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations performed according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

INSPECTING OCCUPATIONS, WOOD MACHINING

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the machining of wood into parts or products. Worker functions include: comparing finish and dimensions of furniture parts, woodenware, staves and other wooden articles to specifications; analyzing and evaluating such factors as balance, proportion and colour when grading finished products; manipulating gauges, templates, calipers and rules when measuring items; and handling wooden parts and products during quality-control work. Work activities include: examining items for cracks, knots and other defects; re-routing salvageable material to machine operators; and maintaining records of inspection results.

LIST OF OCCUPATIONAL TITLES

	GED	SVP		GED	SVP
8546-110T GRADER, SMOKING PIPE (misc. prod. fab., n.e.c.)	3	7	8356-110 INSPECTOR, WOOD MACHINING (furn.; woodworking)	3	4
			8546-114T STAVE INSPECTOR (woodworking)	2	4

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
3	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	5	S-L 47	I	3-2	7-4	19	0Y
4					5					4						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand inspection and operations methods, standards and specifications, and ability to make judgments concerning the quality of machined-wooden products;
- form perception to visually detect imperfections in finish and shape of machined-wooden products;
- eye-hand-finger co-ordination and manual dexterity to use templates, calipers and gauges to accurately measure or check the shape

of workpieces, and to hold and turn products for close examination during routine inspection work;

- capacity to feel the smoothness of finish and imperfections in contour of products with the fingers;
- near visual acuity to detect defects such as knots, scratches, dents and cracks in wood;
- for 8546-110 GRADER, SMOKING PIPE, colour vision to distinguish differences in shade, colour and finish of products.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;
- one to two months of on-the-job training;

- six months or more of related experience in other types of wood-working occupations;
- for 8546-110 GRADER, SMOKING PIPE, from two to four years of on the job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers with supervisory potential may advance to 8350-110 FOREMAN, INSPECTING OCCUPATIONS, WOOD MACHINING, or to appropriate occupations requiring similar skills in other chapters such as 8540-114 FOREMAN, INSPECTING AND GRADING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, WOOD PRODUCTS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to occupations requiring similar skills in other chapters, for example, 8596-236 INSPECTOR-GRADER, HOCKEY STICKS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to machines, processes and techniques.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

WOOD SANDING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with sanding a variety of wooden parts or products, except veneer and plywood panels. Worker functions include: manipulating workpieces against power-driven abrasive belts, disks or spindles, or manipulating portable sanders against surfaces of wooden articles; feeding flat or cylindrical wood stock into sanding machines; and comparing smoothness and finish of sanded items for acceptability to specifications. Work activities include: positioning and securing workpieces in machines; adjusting table height and angle, or belt tension; moving controls to start and stop machines; replacing worn sanding belts, disks or abrasive materials; and filling surface cracks with putty or plastic wood.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8357-110	CONTOUR-SANDER OPERATOR (woodworking)	3	4	8357-122	LATHE SANDER (furn.; misc. prod. fab., n.e.c.; woodworking)	2	2
8357-114	TURNING-SANDER TENDER (furn.; woodworking)	3	3	8357-126	SANDER, PORTABLE MACHINE (furn.; woodworking)	2	2
8357-118	SANDER, MACHINE (furn.; misc. prod. fab., n.e.c.; woodworking)	2	3	8357-130	CYLINDER-SANDER FEEDER (furn.; woodworking)	2	2
				8357-134	SANDING-MACHINE FEEDER (woodworking)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	L-M 347	I 567	3-2	4-2	193	23Y	
			4	3													

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply the methods of wood sanding, the use of powered and hand-held sanding equipment and to follow instructions;
- form perception to observe slight differences and imperfections in surface finish of wood;
- eye-hand-finger co-ordination to guide stock against sanding machines or to manipulate portable sanders;
- manual dexterity to adjust machine settings and to hold and guide portable disk or belt sanders or to feed stock into sanding machines;

- strength to perform light to medium work requiring lifting of wood stock occasionally weighing up to forty pounds;
- ability to work in a stooped position when using portable sanding equipment at or near floor level;
- ability to verify smoothness of sanded stock by feeling with fingers;
- visual acuity to determine if surfaces are properly sanded and contours shaped according to specifications;
- capacity for working adjacent to noisy woodworking machines;
- capacity to work under dusty conditions and exposed to hazards from abrasive elements and moving machine parts.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- seven to ten years of general education;
- on-the-job training of from one to six months.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter who have supervisory potential may advance to 8356-110 INSPECTOR, WOOD MACHINING or to 8350-122 FOREMAN, WOOD SANDING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to occupations within this chapter, or to other occupations requiring similar skills, such as those in Minor Group 835, WOOD MACHINING OCCUPATIONS, or in Chapter 8393, FILING, GRINDING, BUFFING, CLEANING AND POLISHING OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

WOOD MACHINING OCCUPATIONS, N.E.C.

This group includes occupations not elsewhere classified, concerned with a variety of activities in the machining of wood, such as framing timbers and poles, sawing and shaping wooden paddles, laying out, cutting lines on wood stock, cutting moulding stock and pointing wooden dowels.

OCCUPATIONAL TITLES	QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																	
	Aptitudes											PA	EC	GED	SVP	Ints.		Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
FRAME-TABLE OPERATOR (woodworking)	4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	5	M 347	O 5	3	5	91	Y0	
OAR MAKER (woodworking)	4	4	4	<u>3</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 567	3	3	91	Y0	
BUTTLE-SHAPER-AND-TIP INSERTER (woodworking)	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5	L 4	I 56	3	3	91	Y0	
BUTTLE FINISHER (woodworking)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	3	3	19	2Y	
LAY-OUT MAN (woodworking)	<u>4</u>	4	4	<u>4</u>	4	4	<u>3</u>	<u>4</u>	4	5	5	L 47	I	2	3	13	2Y	
MOULDING CUTTER (woodworking)	4	4	4	<u>4</u>	4	5	<u>3</u>	<u>4</u>	<u>4</u>	4	5	L 47	I 6	2	3	931	2Y	
POLE FRAMER (construction)	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	4	5	VH 2347	O 6	2	3	913	2Y3	
BUTTLE-CAP-LINER CUTTER (woodworking)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 4	I	2	2	319	23Y	
DOWEL POINTER (furn.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	L 4	I 5	2	2	319	23Y	

CUTTING AND SHAPING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS

WORK PERFORMED

This chapter includes occupations concerned with cutting, drilling or shaping clay, glass, stone and related materials to specified dimensions. Worker functions include: operating or tending special lathes, saws, drilling machines and boring mills or other equipment to machine clay, glass or stone materials; carving stone to precise design and shape by hand; compiling and analyzing data from drawings and specifications or sample of finished product to determine appropriate fabrication procedures; manipulating hand tools, power tools and special devices to shape materials into desired configuration; and comparing shape, finish and dimensions of completed articles to ensure acceptability to specified standards. Work activities include: laying out designs or cutting lines on workpieces; positioning workpieces in machines; selecting and installing cutting tools; moving controls to start, stop and adjust machines; and measuring finished items using calipers, rule and templates.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8371-110	STONE CARVER (cement, stone & clay)	4	7	8371-118	STONECUTTER, HAND (cement, stone & clay)	3	5

B

		GED	SVP			GED	SVP
8371-114	MACHINE OPERATOR, CEMENT PIPE (cement, stone & clay)	3	6	8371-138	STONE PLANER (cement, stone & clay)	3	5
8371-122	GRINDING-STONE SHARPENER (cement, stone & clay)	3	5	8371-142	WIRE-SAW OPERATOR (cement, stone & clay)	3	5
8371-126	STONE SAWYER (cement, stone & clay; non- metal. min. prod., n.e.c.)	3	5	8371-146	GREENWARE DRILLER (cement, stone & clay)	3	4
8371-130	GREENWARE TURNER (cement, stone & clay; non- metal. min. prod., n.e.c.)	3	5	8371-190	GLASS-CUT-OFF-MACHINE OPERATOR (glass)	3	4
8371-134	GRINDING-WHEEL DRESSER (non- metal. min. prod., n.e.c.)	3	5	8371-150	STONE DRILLER (cement, stone & clay)	3	3
				8371-194	GLASS-LATHE OPERATOR (electronic equip.)	2	3

C

		GED	SVP			GED	SVP
8371-154	MILLSTONE CUTTER (non- metal. min. prod., n.e.c.)	2	3	8371-162	STONE-SPLITTER, HAND (cement, stone & clay)	2	2
8371-198	GLASS-CUTTER, HAND (glass)	2	3	8371-166	CARBON-PLANER TENDER (non- metal. min. prod., n.e.c.)	2	2
8371-202	GLASS-CUTTER OPERATOR (glass)	2	3	8371-206	GLASS-DRILL TENDER (glass)	2	2
8371-158	CONCRETE-SAW TENDER (cement, stone & clay)	2	2	8371-170	STONE-SPLITTER TENDER (cement, stone & clay)	2	2
				8371-210	GLASS-CUTTER HELPER (glass)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>2</u>	<u>2</u>	4	3	M-H 47	15 157	4-3	7-5	9018 901	0Y9 0Y	
B	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M-H 47	157	3-2	6-3	91	20Y	
			3					<u>3</u>		4								
C	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	M-H 47	157	2	3-2	913	2Y0	
					5					4								

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply the techniques of cutting, shaping, carving and finishing stone;
- numerical ability to compute dimensions and locate reference points from specifications data when laying out work;
- spatial perception to examine finished product from sketches or drawings and to shape stone as desired;
- form perception to examine finished work to verify acceptability according to specifications;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity, to use hammer, hand chisels, pneumatic chisel and other carving tools or measuring instruments to carve design into stone or cut and shape stone;

B

- learning ability to understand and apply the techniques for operating machines that cut, drill, plane, bore and shape clay, glass or stone;

- spatial perception to visualize machine settings or sequence of operations needed to cut or shape material to specified dimensions;
- form perception to inspect product for defects and to read measuring instruments;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to manipulate lay-out, measuring and hand tools, and to operate and adjust machines.

C

- learning ability to understand and follow simple instructions;
- form perception for tasks such as examining stones to determine rift, grain or cleavage lines or to inspect glass for irregularities;
- eye-hand-finger co-ordination and manual dexterity to use hand or cutting tools to break or cut glass, sharpen millstones or split stones.

All workers in these clusters also require:

- physical capacity to perform medium to heavy work requiring frequent handling, lifting and reaching for items weighing up to fifty pounds;
- visual acuity and depth perception for accurate shaping and carving;
- adaptability to working in the presence of continuous noise and dust from hammers, chisels and tools operated by compressed air.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- seven to ten years of general education;
- from six months to three years of on-the-job training.

B

- seven to ten years of general education;

- from one to twelve months of on-the-job training;
- three to six months experience in helping or operating precision-machine tools.

C

- eight years of general education;
- from two weeks to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter with supervisory potential may advance to 8370-114 FOREMAN, CUTTING AND SHAPING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. With some additional training, advancement for workers in Clusters B and C may be progressively to occupations requiring higher skills in those clusters or in Cluster A.

Transfer

Transfer possibilities may be to other occupations requiring similar skills within this chapter or to appropriate occupations in Chapter 8373, ABRADING AND POLISHING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally,

for Cluster A:

- activities leading to satisfaction from tangible results;
- for 8371-110 STONE CARVER, abstract and creative work.

for Cluster B:

- routine, concrete and organized work.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

Additionally,

- for 8371-110 STONE CARVER, the evaluation of information against sensory or judgmental criteria.

for Clusters B and C:

- repetitive or short cycle operations carried out according to set procedures or sequences.

ABRADING AND POLISHING OCCUPATIONS: STONE, CEMENT, ABRASIVES AND CLAY

WORK PERFORMED

This chapter includes occupations concerned with grinding and polishing stone, cement, abrasives and clay materials. Worker functions include: operating and tending machines that grind, polish or sandblast building or monumental stone; manipulating hand tools to level and smooth stone or to dress glazed ware; comparing dimensions, contours and finish of workpieces to ensure acceptability to specifications; working to closely specified tolerances when lapping granite-block surface plates; and compiling collimator readings in graphic form to indicate deviations at any point on plates. Work activities include: positioning and securing workpieces on work table or in machine; selecting and installing abrasive or polishing wheels; grinding abrasive wheels to specified dimensions; moving controls to start, stop and adjust machines; cutting inscriptions or decorative designs; and examining workpieces for such surface defects as rough spots, cracks and scratches.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8373-110	SURFACE-PLATE FINISHER (cement, stone & clay)	4	7	8373-118	STONE POLISHER, HAND (cement, stone & clay)	3	6
8373-114	STONE POLISHER, MACHINE (cement, stone & clay)	3	6	8373-122	CONTOUR GRINDER, MACHINE (cement, stone & clay)	3	5

B

		GED	SVP			GED	SVP
8373-126	SANDBLASTER, STONE (cement, stone & clay)	3	4	8373-134	STONE BEVELER (cement, stone & clay)	2	4
8373-130	STONE-GRINDER TENDER (cement, stone & clay)	3	4	8373-138	WARE DRESSER (cement, stone & clay)	3	3
				8373-142	ABRASIVE-WHEEL GRINDER (cement, stone & clay)	3	3

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	3	4	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M-H 347	I 567	4-3	7-5	910	Y0
		3	4	3				<u>3</u>		5	<u>3</u>					91	
B	4	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M-VH 47	I 567	3-2	4-3	91	Y0
	3		5	<u>3</u>	<u>4</u>			<u>4</u>	<u>4</u>	5	<u>3</u>					913	2Y0

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand the techniques required and operation or machines used to grind, polish or sandblast stone, dress glazed and decorated ware or grind abrasive wheels;
- spatial perception for 8373-126 SANDBLASTER, STONE to estimate or achieve desired depth of cut when sandblasting inscriptions or decorative designs in surface of stone;
- form perception to see slight imperfections in surface and finish of workpieces or when using collimator to prepare graph to indicate tolerance deviation at any point;
- eye-hand co-ordination to rapidly and accurately make precise movements when grinding, polishing or cutting workpieces;
- finger dexterity to measure or feel workpieces;

- manual dexterity to set up and operate machines or turn valves to supply air or water to the equipment, and to handle tools such as levels, portable grinders and polishers;
- colour discrimination to match colours when mixing colouring compound with wax to fill surface imperfections of stone workpieces;
- capacity to do medium to heavy work lifting fifty to one hundred pounds with frequent lifting or pushing of tools or objects weighing up to fifty pounds;
- capacity to work in an environment where there is considerable noise and dust from machines and exposure to mechanical hazards, such as moving machinery or sharp cutting tools.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- from six months to three years of on-the-job training under the

guidance of an experienced worker, or as an apprentice, depending on the occupation.

B

- eight to ten years of general education;
- from two to six months of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter with supervisory potential may advance to 8370-110 FOREMAN, ABRADING AND POLISHING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to other occupations requiring similar skills within this chapter, or to appropriate occupations in Chapter 8371, CUTTING AND SHAPING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIAL.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to machines, processes and techniques;
- dealing with things and objects.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

ABRADING, POLISHING AND COATING OCCUPATIONS: OPTICAL ELEMENTS

WORK PERFORMED

This chapter includes occupations concerned with grinding, polishing and coating optical elements such as lenses, reflectors, filters and prisms. Worker functions include: setting up, operating or tending one or more grinding or polishing machines; manipulating glass elements and adjusting controls of precision grinding, measuring, edging or coating equipment and optical measuring instruments; working precisely and skilfully to grind and polish optical elements; compiling information from work orders and prescriptions; and comparing thickness, contour, power and surface finish of finished lenses to specified standards. Work activities include: selecting and securing grinding or polishing tools in machines; mounting lenses in holder, block or collet; moving controls to start, stop and regulate equipment; coating optical elements with metal or chemical film to change reflective qualities; measuring lenses using precision measuring instruments; and examining them for chips, pits and scratches.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8373-206	LENS-GRINDER-POLISHER SET-UP MAN (scient. & ind. equip., n.e.c.)	3	7	8373-210	OPTICIAN (scient. & ind. equip., n.e.c.)	3	7

B

		GED	SVP			GED	SVP
8373-214	LENS GRINDER, HAND (scient. & ind. equip., n.e.c.)	3	5	8373-222	OPTICAL-ELEMENT COATER (scient. & ind. equip., n.e.c.)	3	5
8373-218	LENS GRINDER AND POLISHER (scient. & ind. equip., n.e.c.)	3	5	8373-230	LENS-POLISHING-MACHINE OPERATOR (scient. & ind. equip., n.e.c.)	3	4

C

		GED	SVP			GED	SVP
8373-226	PRECISION-LENS CENTERER-EDGER (scient. & ind. equip., n.e.c.)	3	5	8373-246	LENS-EDGER TENDER (scient. & ind. equip., n.e.c.)	2	3
8373-234	LENS EDGER, HAND (scient. & ind. equip., n.e.c.)	3	4	8373-250	LENS-GRINDING-MACHINE TENDER (scient. & ind. equip., n.e.c.)	2	3
8373-238	CONTACT-LENS-CURVE GRINDER (scient. & ind. equip., n.e.c.)	3	3	8373-254	POLISHING-PAD MOUNTER (scient. & ind. equip., n.e.c.)	2	2
8373-242	CONTACT-LENS-EDGE BUFFER (scient. & ind. equip., n.e.c.)	2	3				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	3	7	910	Y0	
		4			<u>3</u>						4							
B	3	3	3	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I	3	5-4	91	Y0	
		4			<u>2</u>					4	5							
C	4	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	S-L 47	I	3-2	5-2	913	Y02	
	3		3		<u>2</u>												2Y3	
					<u>4</u>													

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the basic theory of optics and to set up, operate or tend lens abrading, polishing or coating machines;
- form perception to discern pertinent detail such as pits or scratches and other surface imperfections on optical elements, and to verify curvature and thickness of ground lens, using templates or gauges;
- eye-hand-finger co-ordination and manual dexterity to set up machines, adjust controls, position lenses and components in machines and turn hand controls;

- finger dexterity to rapidly and accurately handle small objects such as contact lenses, dial controls and hand spherometers;
- near visual acuity, depth perception and accommodation to set up and operate equipment to accurately grind lenses, and inspect lenses for defects and conformance to specifications.

Additionally, for Clusters A and B:

- spatial perception to set up lens grinding and polishing machines in accordance with drawings and specifications, and to produce optical elements of the required dimensions and finish.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to twelve years of general education;
- six months to one year of on-the-job training.
- for 8373-206 LENS-GRINDER-POLISHER SET-UP MAN, two

years of related experience as a Lens Grinder or Lens-Grinding Machine Tender.

- for 8373-210 OPTICIAN, two to three years of on-the-job training.

B

- nine to twelve years of general education;
- up to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter with supervisory potential may advance to 8370-110 FOREMAN, ABRADING AND POLISHING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Advancement may also be possible to appropriate occupations in Chapter 8376, INSPECTING OCCUPATIONS: CLAY, GLASS AND STONE AND RELATED MATERIALS MACHINING. Some experienced workers in Clusters B and C may, with some additional training, advance to occupations in Cluster A.

Transfer

Transfer may be possible to other occupations requiring similar skills within the chapter. With limited additional training, 8373-210 OPTICIAN may also transfer to 3154-110 DISPENSING OPTICIAN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster A:

- work leading to satisfaction from tangible results, such as planning and executing the finishing of quality optical elements.

Additionally, for Cluster C:

- routine, concrete and organized work.

Temperaments**A and B**

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

C

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

ABRADING AND POLISHING OCCUPATIONS: FLAT GLASS AND GLASSWARE

WORK PERFORMED

This chapter includes occupations concerned with grinding and polishing flat glass and glassware to specified finish and dimensions. Worker functions include: tending machines, or manipulating mirrors or other articles against rotating abrasive belt, wheel or disk, to bevel and polish edges of flat glass or to smooth glassware surfaces; and comparing finish quality of ground or polished articles to specifications. Work activities include: selecting and installing appropriate grinding wheels or abrasive belts; moving hand or foot controls to start and stop machines and regulate flow of coolant or abrasives; examining articles for chips, cracks or roughness; and rinsing and cleaning finished items.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8373-162	GROOVE GRINDER (glass)	3	3	8373-178	GLASS-BEVELER TENDER (glass)	2	3
8373-166	EDGE FINISHER, HAND (glass)	3	3	8373-182	GLASS-EDGER TENDER (glass)	2	3
8373-170	GLASS POLISHER (glass)	3	3	8373-186	GLASS-POLISHER TENDER (glass)	2	3
8373-174	GLASSWARE GRINDER (glass)	2	3	8373-190	GLASS-GRINDING-MACHINE FEEDER (glass)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	4	4	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M-H 47	I	3-2	3-2	193	2Y	2Y3
		5		<u>4</u>	5	<u>4</u>		<u>4</u>	4								

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply procedures for operating or tending machines that grind and polish flat glass or glassware;
- form perception to examine grooves and bevelled edges of glass for roughness;
- eye-hand-finger co-ordination and manual dexterity to adjust machines and manipulate workpiece or machine controls to grind and polish glass;
- finger dexterity to rapidly and accurately control movement of glass workpiece or machine;
- capacity to perform medium to heavy work while occasionally lifting materials and portable equipment weighing from fifty to one hundred pounds and frequently lifting or pushing equipment or materials weighing up to fifty pounds;
- near-visual acuity to examine surfaces and edges of glass.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight years of general education;
- from one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter with supervisory potential may advance to 8370-110 FOREMAN, ABRADING AND POLISHING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfers may be to other occupations within this chapter or with some additional training to appropriate occupations in Chapters 8371, CUTTING AND SHAPING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIAL.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried out in relation to processes, machines and techniques;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

INSPECTING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the cutting, shaping, abrading and polishing of clay, glass, stone and related materials. Worker functions include: working to precise standards when measuring characteristics of lenses; compiling data from specifications to determine curvature, diameter, power, focal length and dispersion required for lenses, and tolerances and inspection procedures; comparing dimensions and finish of sheet glass, mirrors or other articles with specifications to ensure acceptable standards are met; and handling materials during quality-control work. Work activities include: cleaning glass surfaces to facilitate inspection; examining articles for flaws such as pits and scratches; and marking defects with crayon or wax pencil.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8376-110	CONTACT-LENS INSPECTOR (scient. & ind. equip., n.e.c.)	3	4	8376-114	OPHTHALMIC-LENS INSPECTOR (scient. & ind. equip., n.e.c.)	3	4
				8376-118	OPTICAL-ELEMENT INSPECTOR (scient. & ind. equip., n.e.c.)	3	4

B

		GED	SVP
8376-122	INSPECTOR, GLASS (glass)	3	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	4	3	<u>3</u>	<u>2</u>	<u>4</u>	<u>3</u>	<u>3</u>	4	5	4		S 47	I	3	4	913	Y0
							<u>4</u>	<u>4</u>										
B	3	4	4	4	<u>3</u>	4	<u>3</u>	<u>4</u>	4	5	4		M 47	I	3	3	913	Y2

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and carry out inspection procedures for production lenses and lens systems using precision testing instruments, according to well defined standards;
- spatial perception to verify lens properties such as power, focal length, curvature or internal qualities, and to interpret these properties in terms of meeting specifications;
- form perception to see pertinent detail in lenses, such as pits, scratches, grey areas, chips, bubbles or cracks;
- clerical perception to correctly read written specifications and avoid perceptual errors in recording inspection results;
- eye-finger co-ordination and finger dexterity to make skilful finger movements when handling lenses and adjusting testing instruments;

- near visual acuity to examine plastic contact lenses or optical elements to detect minute defects or flaws.

B

- learning ability to understand and carry out uncomplicated inspection procedures for glass and mirrors;
- form perception to detect imperfections such as scratches, chips and cracks in glass or mirror sheets;
- eye-finger co-ordination and finger dexterity to place, rotate and inspect glass items and to mark defective areas;
- capacity to perform medium to heavy work when handling, lifting and positioning glass sheets or mirrors weighing up to seventy-five pounds;
- near visual acuity to examine glass or mirrors for defects such as cracks, scratches and chips.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- eight to twelve years of general education;

- three to six months of on-the-job training.

B

- eight to ten years of general education;
- one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement possibilities for workers in this chapter are limited. Experienced workers with supervisory potential may advance to 8370-110 FOREMAN, ABRADING AND POLISHING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities for workers in this chapter are limited but some workers may transfer to occupations in Chapter 8373B, ABRADING, POLISHING AND COATING OCCUPATIONS: OPTICAL-ELEMENTS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations of this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

B

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

GROUP 8379

CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING OCCUPATIONS, N.E.C.

This group includes clay, glass and stone machining occupations, not elsewhere classified, concerned with activities such as grinding and cutting slates, laying out and marking cutting and carving lines on stone, machining asbestos for brake linings, cutting and finishing mirror glass, cutting, grinding and polishing optical elements, and trimming edges of watch crystals.

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C					
<i>Stone, Cement and Clay Machining Occupations, n.e.c.</i>																	
8379-110	SLATE-BED MAKER (sport. & toy)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	4	5	VH 47	I 7	3	6	91 Y0
8379-112	STENCIL CUTTER, STONework (cement, stone & clay)	3	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	M 47	I 6	3	4	91 Y0
8379-114	STONE-LAY-OUT MARKER (cement, stone & clay)	3	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 47	I	3	5	91 0Y
8379-118	BRAKE-LINING FINISHER, ASBESTOS (asbestos & min. wool)	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 567	3	3	931 2Y
8379-122	BED SETTER (cement, stone & clay)	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	4	5	M 347	I	2	3	931 2Y
8379-126	SLATE-CUTTING-AND-GRINDING MACHINE TENDER (cement, stone & clay)	4	4	4	4	<u>4</u>	5	<u>3</u>	4	<u>4</u>	5	5	M 47	I 5	2	2	931 23Y
<i>Glass Machining Occupations, n.e.c.</i>																	
8379-146	FLAT-OPTICAL-ELEMENT MAKER (scient. & ind. equip., n.e.c.)	<u>3</u>	3	3	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	H 47	I	4	7	91 Y0
8379-150	LENS-LAY-OUT MAN (scient. & ind. equip., n.e.c.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>4</u>	5	4	S 47	I	3	6	91 Y0
8379-154	LENS CUTTER-GRINDER (scient. & ind. equip., n.e.c.)	3	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>4</u>	5	5	M 47	I	3	5	91 Y0
8379-158	MIRROR MAKER (glass)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	M 47	I	3	5	91 Y0
8379-162	WATCH-CRYSTAL-EDGE GRINDER (scient. & ind. equip., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>4</u>	4	4	5	L 47	I	2	2	931 23Y
8379-166	LENS BLOCKER (scient. & ind. equip., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>4</u>	<u>4</u>	4	5	5	L 47	I 6	2	2	31 23
8379-170	LENS-EDGER FEEDER (scient. & ind. equip., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>4</u>	<u>4</u>	4	5	5	L 47	I	2	2	31 23Y

ENGRAVERS, ETCHERS AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with engraving and etching designs or lettering on glass, metals, plastics and a variety of other materials and imprinting or indenting designs or letterings on a custom or production basis. Worker functions include: manipulating hand tools and operating pantographs and powered engraving tools or cutting wheels to inscribe designs or lettering on nameplates, jewellery, glassware and other workpieces; tending sand blasting, stamping, impressing or etching equipment to abrade, press or etch designs or lettering on articles; working to close tolerances when laying out and cutting or etching designs and lettering; compiling information concerning measurements, position and details of designs; and comparing finished work for conformance to specifications. Work activities include: positioning and clamping workpieces for engraving; marking and masking surfaces to achieve desired etching effects or to protect unmarked surfaces; mixing etching solutions; observing action of machines and equipment; examining work for depth of cut or clearness of definition; removing protective coatings and cleaning or washing away chips or acids.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8391-110	ENGRAVER, HAND (misc. prod. fab., n.e.c.)	4	7	8391-122	DESIGN CUTTER, JEWELLERY (jewellery & precious metal prod.)	3	6
8391-190	CHASER (jewellery & precious metal prod.)	4	6	8391-126	GLASS ENGRAVER (glass)	3	6
8391-158	ETCHER, AIRCRAFT PARTS (air & space-craft)	4	6	8391-130	ENGRAVER, PANTOGRAPH (jewellery & precious metal prod.; metal fab., n.e.c.)	3	6
8391-114	ROLLER REPAIRMAN, TEXTILE (mach., weld. & forg.)	3	7	8391-194	IMPRINTER AND CASTER, SEALS (misc. prod. fab., n.e.c.)	3	4
8391-118	ENGRAVER, DECORATIVE (jewellery & precious metal prod.; misc. prod. fab., n.e.c.)	3	7				

B

		GED	SVP			GED	SVP
8391-162	ETCHER (misc. prod. fab., n.e.c.)	3	5	8391-134	GLASS DECORATOR (glass)	2	4
8391-132	GLASS MARK-UP MAN (glass)	3	5	8391-138	LENS-BLANK MARKER (scient. & ind. equip., n.e.c.)	2	3
8391-198	MOULD STAMPER (mach., weld. & forg.)	3	4	8391-206	IMPRESSING-MACHINE TENDER (mach., weld. & forg.)	2	3
8391-166	OPTICAL-GLASS ETCHER (scient. & ind. equip., n.e.c.)	3	4	8391-170	ETCHER, ELECTROLYTIC (metal fab., n.e.c.)	2	2
8391-202	NAME-PLATE STAMPER (mach., weld. & forg.)	3	3				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	4	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I 6	4-3	7-4	91	0Y	
		4			<u>3</u>		<u>2</u>		<u>2</u>		4							
B	4	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 47	I 67	3-2	5-2	913	0Y2	
	3				4		4	4			4							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply the knowledge and techniques for engraving, etching, imprinting or indenting lettering or designs on a variety of materials;
- form perception to detect pertinent detail in workpieces, designs or lettering, and to make visual comparisons and see slight differences in widths and lengths of lines;
- eye-hand-finger co-ordination and finger dexterity to rapidly and accurately make precise movements when engraving by hand, controlling pantograph machines or etching equipment or when using small tools to imprint, indent or stamp workpieces;
- manual dexterity to move the hands easily and skilfully in placing and turning motions while laying out design or lettering, hand engraving or operating equipment;

- capacity to perform light to medium work requiring the lifting of glass or metal moulds or parts weighing up to fifty pounds;
- capacity to reach, handle, finger and feel while using hand tools and equipment to lay out, engrave, etch or imprint designs or lettering;
- near visual acuity and depth perception to impart and examine letters, numerals and designs of intricate nature on the surface of glass, metal, plastic or other materials;
- capacity to work inside while exposed to poor atmospheric conditions, such as dust from glass grinding or sandblasting, vapour and odours; possibility of burns from acid solutions; or injury from small metal chips from cutting tools.

Workers in Cluster A also require:

- spatial perception to visualize the finished product from two dimensional sketches, diagrams, photographs or samples when engraving articles which may be curved, cylindrical or spherical in shape.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- a two to three-year apprenticeship program, or up to three years of on-the-job training under the supervision of an experienced worker.

B

- seven to ten years of general education;
- one to twelve months of on-the-job training under the supervision of an experienced worker.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may advance to other occupations requiring higher skills within the chapter. Experienced workers with supervisory potential may advance to 8390-110 FOREMAN, ENGRAVERS, ETCHERS AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities may be to other occupations requiring similar skills with this chapter, or to appropriate occupations in Chapter 9514, PRINTING-ENGRAVING EXCEPT PHOTO ENGRAVING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

Additionally, for Cluster B:

- repetitive or short cycle operations carried out according to set procedures or sequences.

FILING, GRINDING, BUFFING, CLEANING AND POLISHING OCCUPATIONS, N.E.C.**WORK PERFORMED**

This chapter includes occupations, not elsewhere classified, concerned with filing, grinding, buffing, cleaning and polishing materials, parts or products. Worker functions include: setting up, operating or tending equipment such as grinders, tumbling barrels, polishers, sandblasters and ultrasonic cleaning machines; manipulating objects against rotating abrasive or polishing wheels, or holding powered tools against surfaces of objects to achieve desired finish; visually or tactually comparing finish to ensure acceptable standards are met; and compiling grinding or buffing data from specifications, to determine wheels or abrasive to be used. Work activities include: positioning workpieces on work bench or in machine; selecting appropriate hand tools, wheels, abrasives and solutions; sharpening tools such as scissors, shears, knives and chisels; chemically cleaning grease, scale, dirt and other foreign matter from articles to prepare them for further processing; and sandblasting metal objects to specified finish.

LIST OF OCCUPATIONAL TITLES**A**

		GED	SVP			GED	SVP
8393-202	BUFFING-LINE SET-UP MAN (any ind.)	3	6	8393-206	BUFFING MACHINE SET-UP OPERATOR (any ind.)	3	5

B

		GED	SVP			GED	SVP
8393-138	MILL-ROLL GRINDER (rubber)	3	4	8393-290	POLISHING-MACHINE OPERATOR (any ind.)	3	3
8393-286	POLISHER, KNIFE BLADES (jewellery & precious metal prod.)	3	3				

C

		GED	SVP			GED	SVP
8393-210	BUFFER, HAND (any ind.)	3	4	8393-238	METAL CLEANER, IMMERSION (any ind.)	2	3
8393-142	BIT-SHARPENER TENDER (mach., weld. & forg.)	3	4	8393-302	POLISHER, SLIDE FASTENERS (misc. prod. fab., n.e.c.)	2	3
8393-110	MOULD DRESSER (non-ferrous metal)	2	4	8393-240	CLEANER, METAL BLUING (metal fab., n.e.c.; sport. & toy)	2	3
8393-294	NIB FINISHER (misc. prod. fab., n.e.c.)	2	4	8393-166	SWING GRINDER (iron & steel; non-ferrous metal)	2	2
8393-114	FILER, HAND (metal fab., n.e.c.)	2	3	8393-214	BUFFING-MACHINE TENDER (any ind.)	2	2
8393-134	GRINDER AND SHARPENER (any ind.)	2	3*	8393-170	GRINDER, COIL SPRINGS (metal fab., n.e.c.)	2	2
8393-146	BENCH GRINDER, HAND (any ind.)	2	3	8393-174	PELLET GRINDER (mach., weld. & forg.)	2	2
8393-150	GRINDER-CHIPPER (any ind.)	2	3	8393-178	PLATEN GRINDER (misc. prod. fab., n.e.c.)	2	2
8393-154	GRINDER-TRIMMER (any ind.)	2	3	8393-306	TUMBLING-BARREL TENDER (metal fab., n.e.c.)	2	2
8393-158	TOOL GRINDER (any ind.)	2	3	8393-326	TUMBLING-MACHINE TENDER (any ind.)	2	2
8393-234	GLASS-MOULD CLEANER (glass)	2	3	8393-242	CARTRIDGE-PARTS CLEANER (explosives)	2	2
8393-298	POLISHER AND BUFFER, SHEET METAL (metal stamp., press. & coat.)	2	3				
8393-162	GRINDER, MACHINE KNIFE (any ind.)	2	3				

		GED	SVP			GED	SVP
8393-246	SANDBLASTING-MACHINE TENDER (any ind.)	2	2	8393-254	WASHING-MACHINE TENDER, INDUSTRIAL (any ind.)	2	2
8393-250	ULTRASONIC-CLEANING- MACHINE TENDER (any ind.)	2	2	8393-258	DRIFTER (iron & steel)	2	2
				8393-266	SANDBLASTER (any ind.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4		M 47	I 567	3	6-5	91	0Y 0Y9
B	3	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5		M 47	I 567	3	4-3	913	2Y
C	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5		L-M 47	I 567	3-2	4-2	931	2Y
			5		<u>3</u>	4	<u>3</u>			4								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply the techniques for grinding, buffing, polishing or cleaning objects made of a variety of materials and to select the appropriate procedures and tools;
- form perception to examine and measure finished workpieces for conformance to specifications;
- eye-hand-finger co-ordination to position and secure workpieces, handle machine controls or hold workpieces against abrasive or polishing wheels;
- manual dexterity to extend the arms to reach for and handle machine controls, workpieces and tools;
- sufficient strength to perform medium work requiring the lifting of workpieces, materials or tools weighing fifty pounds or guiding and

controlling machines with frequent exertion equal to lifting twenty pounds;

- near visual acuity to guide and adjust machines or when examining workpieces for specified finish;
- capacity to work in proximity to loud noise;
- adaptability to working while exposed to hazards such as moving abrasive belts or wheels and dust from grinding or sandblasting operations.

Additionally, for Clusters A and B:

- spatial perception to visualize the type of grinding, polishing or sanding attachment to be fitted and the angle of contact to be set, in order to achieve the specified product finish or shape.

Additionally, for Cluster A:

- finger dexterity to set up and adjust machines.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- six months to two years of on-the-job training and related experience.

B and C

- eight to ten years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to other occupations requiring higher skills within the chapter, such as from Cluster C to B, or with some additional training to Cluster A. Those with supervisory potential may advance to 8390-114 FOREMAN, FILING, GRINDING, BUFFING, CLEANING AND POLISHING OCCUPATIONS, N.E.C. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

For most workers in this chapter, transfer possibilities without additional training are limited to other occupations within the chapter requiring similar skills.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines, tools and techniques;
- dealing with things and objects.

Additionally, for Clusters B and C:

- routine, concrete and organized work.

Temperaments**A**

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

B and C

- repetitive or short cycle operations carried out according to set procedures of sequences;
- the precise attainment of set limits, tolerances or standards.

PATTERNMAKERS AND MOULDMAKERS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with making patterns, moulds, models, samples and templates out of metal, wood, plastic or other materials for use in the fabrication of a wide variety of products, such as jewellery, furniture and pottery.

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Patternmaking Occupations</i>																		
8395-110	FURNITURE REPRODUCER (furn.)	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>2</u>	<u>2</u>	<u>3</u>	5	4	L 47	I	5	7	910	0Y
8395-114	SAMPLE MAKER, JEWELLERY (jewellery & precious metal prod.)	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>2</u>	<u>2</u>	5	5	L 47	I	5	7	910	Y0
8395-118	MODEL MAKER (any ind.)	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>2</u>	<u>3</u>	<u>2</u>	5	5	M 47	I	4	7	910	Y0
8395-122	MODEL MAKER, POTTERY (cement, stone & clay)	<u>3</u>	3	4	<u>2</u>	<u>3</u>	4	<u>2</u>	<u>3</u>	<u>2</u>	5	5	L 47	I	4	7	910	0Y9
8395-126	PATTERNMAKER, METAL (iron & steel; non-ferrous metal)	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>2</u>	<u>3</u>	<u>2</u>	5	5	M 47	I 56	4	7	910	Y0
8395-130	LOFTSMAN (air & space-craft)	<u>3</u>	3	<u>2</u>	<u>2</u>	<u>3</u>	4	<u>2</u>	<u>3</u>	<u>2</u>	5	5	L 347	I	4	7	910	Y0
8395-134	MODEL MAKER, JEWELLERY (jewellery & precious metal prod.)	<u>3</u>	3	3	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>2</u>	<u>3</u>	5	5	L 47	I	4	7	910	Y0
8395-138	PATTERNMAKER, METAL FURNITURE (furn.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>2</u>	<u>3</u>	<u>3</u>	5	5	M 47	I	4	7	910	Y0
8395-142	PATTERNMAKER, PANTOGRAPH MACHINE (mach., weld. & forg.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>2</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	4	7	910	Y0
8395-146	PATTERN MAN, ENVELOPES (paper prod.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	4	7	910	0Y
8395-150	TEMPLATE MAKER (any ind.)	<u>3</u>	3	3	<u>2</u>	<u>3</u>	4	<u>2</u>	<u>3</u>	<u>3</u>	5	5	M 347	I	4	7	910	0Y
8395-154	PATTERNMAKER, HAT (garment & fabric)	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	3	7	910	0Y
8395-158	PATTERNMAKER, PLASTER (air & space-craft)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I	4	6	910	0Y
8395-162	PATTERN GATER (iron & steel; non-ferrous metal)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 7	4	5	19	Y0
8395-166	SHOE-LAST PATTERNMAKER (shoes)	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I	3	5	91	Y0
8395-170	LAY-UP MAN, PLASTICS (plastic prod.)	3	4	4	<u>4</u>	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 7	3	5	91	0Y
8395-174	FUEL-TANK-FORM BUILDER (air & space-craft; rubber)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 347	I 47	3	4	91	Y0
8395-178	WAX-PATTERN ASSEMBLER AND REPAIRER (iron & steel; non-ferrous metal)	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I	2	2	391	2Y
8395-182	WAX-PATTERN MOULDER (iron & steel; non-ferrous metal)	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I	2	2	391	23Y
8395-186	WAX-PATTERN COATER (iron & steel; non-ferrous metal)	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I	2	2	31	23Y
<i>Mouldmaking Occupations</i>																		
8395-200	MODEL-AND-MOULD MAKER, CONCRETE PRODUCTS (cement, stone & clay)	<u>3</u>	3	4	<u>2</u>	<u>3</u>	4	<u>2</u>	<u>3</u>	<u>2</u>	5	5	M 47	I	4	7	910	0Y
8395-204	MOULD MAKER (woodworking)	3	3	3	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	H 347	I	3	6	91	Y0
8395-208	TIRE-MOULD REPAIRMAN (rubber)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	H 47	I	3	6	91	Y0
8395-212	MANNEQUIN-MOULD MAKER (plastic prod.)	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 7	3	5	910	0Y
8395-216	POTTERY-MOULD MAKER (cement, stone & clay)	3	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 7	3	5	910	0Y

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES

Aptitudes

PA

EC

GED

SVP

Ints.

Temps.

G V N S P Q K F M E C

8395-220	MOULDING SCREEN FORMER (mech. equip., n.e.c.)	3 4 4 <u>4</u> <u>4</u> 5 <u>3</u> 4 <u>3</u> 5 5	M 47	I	3	5	910	0Y
8395-224	WAX-PATTERN MOULDMAKER (iron & steel; non-ferrous metal)	4 4 5 4 <u>4</u> 5 <u>4</u> 4 <u>3</u> 5 5	L 47	I	2	3	91	2Y
<i>Miscellaneous Occupations</i>								
8395-244	JIG AND FORM MAKER (any ind.)	<u>3</u> 3 3 <u>2</u> 3 4 <u>2</u> <u>3</u> <u>3</u> 5 5	M 47	I 6	4	7	910	0Y
8395-248	MODEL-AND-MOULD MAKER, PLASTER (cement, stone & clay; misc. prod. fab., n.e.c.)	<u>3</u> 3 3 <u>2</u> 3 4 <u>2</u> <u>3</u> <u>2</u> 5 5	M 47	I 7	4	7	910	0Y
8395-252	BUTTON DESIGNER AND SAMPLE MAKER (misc. prod. fab., n.e.c.)	3 3 4 3 <u>3</u> 4 <u>3</u> <u>3</u> <u>3</u> 5 <u>3</u>	L 47	I	3	6	901	0Y
8395-256	PLASTER DIE MAKER (cement, stone & clay)	3 4 4 <u>4</u> 4 4 <u>3</u> 4 <u>3</u> 5 5	H 4	I	3	5	910	0Y

OTHER MACHINING AND RELATED OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with using machines or hand tools to shape, work or join various materials, parts and products according to specifications.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
8399-110	AIRCRAFT MECHANIC, EXPERIMENTAL (air & space-craft)	<u>2</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 2347	I 6	5	8	91	Y01
8399-114	MODEL AND MOCK-UP MAKER (air & space-craft)	<u>2</u>	3	3	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 2347	I 6	5	8	91	Y01
8399-116	DIE MAKER, PAPERBOARD (mech. equip., n.e.c.)	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I	4	7	91	Y0
8399-118	FLOAT MAKER (non-ferrous metal)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 7	3	6	91	Y0
8399-120	PORTABLE-DIAMOND-DRILL-AND SAW OPERATOR (cement, stone & clay; construction)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	VH 34567	B 567	3	6	91	Y0
8399-122	BUTTON-MACHINE SET-UP MAN (misc. prod. fab., n.e.c.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I 5	3	5	91	Y0
8399-126	SAFETY-RAZOR-BLADE MAKER (metal fab., n.e.c.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	5	L 47	I 6	3	5	91	Y0
8399-130	PORTABLE-DIAMOND-DRILL-AND SAW OPERATOR HELPER (cement, stone & clay; construction)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	VH 345	B 4567	2	2	139	23

ENGINE AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with fabricating and assembling internal-combustion engines used in transportation, construction, agricultural or other types of vehicles, steam or gas turbines, transmission systems, and engine accessories such as water and fuel pumps, radiators and carburetors. Worker functions include: working to close tolerances to assemble, align and adjust mechanical parts and components; manipulating hand and power tools and precision measuring instruments; operating machines such as arbor presses and grinders; analyzing data from blueprints and specifications to determine assembly procedures; computing dimensions and locating reference points; and comparing assembled units to ensure correct alignment and relationship of parts. Work activities include: reading work orders, drawings and specifications; and fitting, pressing, aligning, screwing or bolting to assemble, adjust or install parts, components or accessories.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8511-110	TURBINE FITTER (mech. equip., n.e.c.)	4	8	8511-114	INTERNAL-COMBUSTION-ENGINE ASSEMBLER (mech. equip., n.e.c.)	3	5
				8511-118	AUTOMOTIVE-PRODUCTION FITTER (motor vehicle)	3	4

B

		GED	SVP			GED	SVP
8511-126	GEARED-AUTOMOTIVE- COMPONENTS ASSEMBLER (motor vehicle)	2	3	8511-130	AUTOMOTIVE-ENGINE- ACCESSORIES ASSEMBLER (motor vehicle)	2	2
				8511-134	ENGINE ASSEMBLER, PRODUCTION LINE (mech. equip., n.e.c.)	2	2

N.B. Occupation 8511-122 CLUTCH REBUILDER (motor vehicle) has been transferred, for Volume II purposes, to Chapter 8581, MOTOR VEHICLE MECHANICS AND REPAIRMAN.

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M-H 47	I 5	4-3	8-4	910	Y0
		4		<u>2</u>				<u>4</u>		4	5						
B	4	4	5	<u>4</u>	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 347	I 5	2	3-2	139	23Y
	3				4			<u>4</u>			4						

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply mechanical principles in engine construction and operation;
- spatial perception to visualize the relationship and arrangement of component parts;
- form perception to discern pertinent detail when fitting, aligning and adjusting engine parts and components and to examine parts and completed assemblies for defects;
- eye-hand-finger co-ordination and manual dexterity to use hand and power tools and precision measuring instruments when assembling, adjusting or securing parts;
- ability to move fingers and manipulate small objects such as locking pins, bolts and screws;
- physical strength to perform medium to heavy work, lifting up to fifty pounds, and to remain standing for extended periods; and agility to work in awkward positions such as kneeling, stooping or crouching, while reaching for, handling or fingering hand and power tools, parts, accessories or precision measuring instruments;
- good vision and depth perception for close-up work such as aligning and adjusting mechanical parts and setting up and adjusting machines;
- capacity to work inside while exposed to intermittent and continuous noises of pneumatic tools, hydraulic presses or test turbines.

B

- learning ability to understand and apply bench or assembly-line techniques used in the assembly of internal-combustion or other types of engines and accessories;
- spatial perception to understand and visualize the arrangement of component parts and to position parts in specified relationship to one another;
- form perception to detect improper fitting parts or accessories;
- eye-hand-finger co-ordination and manual dexterity to assemble mechanical parts, make adjustments and tighten screws and bolts using hand and power tools;
- finger dexterity to manipulate small objects such as bolts, screws and component parts;
- physical strength to remain standing for extended periods, and perform light to medium work, lifting weights up to twenty-five pounds;
- agility to work in awkward positions such as kneeling, stooping and crouching while reaching for, handling and fingering hand and power tools and engine parts;
- good vision and depth perception for close-up work such as aligning and adjusting mechanical parts;
- capacity to work inside while exposed to noise of pneumatic tools and hydraulic presses.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten or more years of general education, preferably with some technical training acquired at a technical high or vocational training school;
- three months to one year of on-the-job training.
- for 8511-110 TURBINE FITTER, ten to twelve years of general education, preferably including technical high school;

B

- a four to five-year apprenticeship program; or
- up to four years of on-the-job training under the guidance of a qualified tradesman.
- eight to ten years of general education;
- one to three months of on-the-job training or related experience in assembly-line work.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter who acquire additional training may advance to higher skilled occupations within their respective cluster, or from Cluster B to A. Experienced workers may also advance to appropriate occupations in Chapter 8526, INSPECTING AND TESTING OCCUPATIONS, FABRICATING AND ASSEMBLING METAL PRODUCTS, N.E.C. Those with supervisory potential may advance to 8510-118 FOREMAN, ENGINE ASSEMBLY. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in these clusters may, with very limited additional training, transfer to occupations requiring similar basic skills in other chapters, for example, 8511-110 TURBINE FITTER may transfer to 8526-238 TURBINE INSPECTOR AND TESTER, 8511-126 GEARED-AUTOMOTIVE-COMPONENTS ASSEMBLER may transfer to 8523-134 GEARCASE ASSEMBLER and 8511-118 AUTOMOTIVE-PRODUCTION FITTER may transfer to 8526-122 ENGINE TESTER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects such as engines, component parts, tools and shop equipment;
- activities leading to satisfaction from tangible results.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

B

Interests

- dealing with things and objects such as engines, component parts and hand and power tools;
- routine, concrete and organized work;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

OTHER CLUES

- hobbies which involve hand craftsmanship such as model building or woodworking.

MOTOR VEHICLE FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with fabricating and assembling motor vehicles, trailers, automotive sub-assemblies and components other than engines and their accessories, utilizing manufactured constituent parts and assemblies. Worker functions include: working to close tolerances to lay out, measure, mark, cut, fit and install frames, panels, bulkheads, ductwork, doors and other vehicle parts; manipulating hand and power tools to install parts and accessories; and compiling and comparing data from drawings and work orders to assemble products as specified. Work activities include: installing engines, transmissions and other components; fitting, bolting, screwing, riveting and welding parts in position; and adjusting fabricated or assembled components.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8513-110	AUTOMOTIVE BUILDER (motor vehicle)	4	7	8513-114	TRUCK-TRAILER BUILDER (motor vehicle)	4	6

B

		GED	SVP			GED	SVP
8513-118	TRAILER FINISHER, EXTERIOR (motor vehicle)	3	5	8513-134	AUTOMOTIVE ASSEMBLER (motor vehicle)	2	2
8513-122	TRAILER FINISHER, INTERIOR (motor vehicle)	3	4	8513-138	FITTER AND ADJUSTER (motor vehicle)	2	2
8513-126	TRAILER-FRAME ASSEMBLER (motor vehicle)	3	3	8513-142	LEAF-SPRING ASSEMBLER (motor vehicle)	2	2
8513-130	ASSEMBLER, CONVERTIBLE TOP (motor vehicle)	2	2	8513-146	WHEEL-ASSEMBLY INSTALLER, TRAILER (motor vehicle)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>2</u> <u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	H 2347	I 5	4	7-6	91	Y01	
B	4 3	4	4 5	<u>4</u>	<u>4</u> <u>3</u>	5	<u>3</u> <u>4</u>	<u>3</u> <u>4</u>	<u>3</u>	4 5	5 4	M-H 347	I 5	3-2	5-2	193 13	2Y 2Y3	

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply the principles and techniques of motor vehicle construction and operation;
- spatial perception to visualize, from blueprints and specifications, the completed vehicle and the relationship and arrangement of vehicle parts and components;
- form perception to notice pertinent detail when fitting, adjusting and assembling vehicle parts and accessories;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to place and secure parts, make adjustments and manipulate hand and power tools and welding equipment;

- physical capacity to stand for extended periods while working, and strength to perform medium to heavy work requiring frequent lifting of automotive parts, assemblies or components weighing up to fifty pounds;
- agility to work in kneeling, crouching, stooping, or other positions while using tools to install parts and assemblies;
- near visual acuity, depth perception and accommodation to fit and adjust mechanical parts;
- capacity to work inside in proximity to loud, almost continuous noises from power tools and hammering.

Workers in Cluster A also require:

- agility to climb and maintain balance on ladders and scaffolds.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- a three to four-year company sponsored apprenticeship program.

B

- eight to ten years of general education;
- on-the-job training ranging from one month to one year, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in this chapter may advance to occupations requiring higher skills within their individual cluster, or from Cluster B to A. Those with supervisory potential may advance to 8510-130 FOREMAN, MOTOR VEHICLE ASSEMBLY. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some workers in Cluster B may transfer to other occupations requiring similar skills within that cluster. Workers in Cluster B, whose work involves woodworking activities, may also transfer to appropriate occupations requiring similar basic skills in Minor Group 854, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS, or in Chapter 8781, CARPENTERS AND RELATED OCCUPATIONS. Similarly, workers in both clusters may with limited additional training, transfer to appropriate occupations elsewhere in Minor Group 851/852, FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work carried on in relation to machines and techniques;
- dealing with things and objects of a mechanical and structural nature.

Temperaments

- the precise attainment of set limits, tolerances or standards in the performance of precision work as reflected in adherence to specifications and attention to details;
- the evaluation of information against measurable or verifiable criteria when assessing mechanical and structural characteristics and performing tests to ensure correct functioning of assembled units;
- a variety of duties often characterized by frequent change.

B

Interests

- dealing with things and objects;
- non-social work carried on in relation to machines, processes or techniques, such as those involved in the installation of automotive accessories, plumbing and electrical fixtures and floor covering.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards;

OTHER CLUES

- hobbies such as model building and handicrafts are indicative of suitable interests.

AIRCRAFT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with assembling aircraft and aircraft subassemblies such as power plants, undercarriages, tails, wings, control linkages and hydraulic and pneumatic systems, normally utilizing previously manufactured parts and components. Worker functions include: working to close tolerances to lay out, install, align and adjust assemblies and components; manipulating hand and power tools and parts of subassemblies; compiling data from drawings and specifications; and comparing characteristics of assembled units with standards specified on drawings and production orders. Work activities include: fitting, drilling, reaming, screwing, bolting or riveting parts to assemble components; installing and adjusting assemblies using jigs, fixtures, templates and other work aids; bonding metal surfaces together using press or autoclave; sealing and testing tanks and pressurized compartments; and testing hydraulic and pneumatic systems.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8515-110	TAPE-CONTROLLED-RIVETING-MACHINE OPERATOR (air & space-craft)	4	6	8515-126	INSTALLER, HYDRAULIC (air & space-craft)	4	6
8515-114	AIRCRAFT RIGGER (air & space-craft)	4	6	8515-130	AIRCRAFT FITTER-ASSEMBLER, BENCH (air & space-craft)	4	5
8515-118	AIRFRAME ASSEMBLER (air & space-craft)	4	6	8515-134	METAL-BONDING EQUIPMENT OPERATOR (air & space-craft)	4	5
8515-122	ASSEMBLER-INSTALLER, AIRCRAFT POWER PLANT (air & space-craft)	4	6	8515-138	AIRFRAME SUBASSEMBLER (air & space-craft)	4	5
				8515-142	AIRCRAFT SEALER (air & space-craft)	3	4

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>2</u>	4	5	L-M 2347	I 5	4-3	6-4		910	0Y
	4	4	<u>3</u>	<u>2</u>			4	<u>3</u>	5	4						91	

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply mechanical principles and aircraft assembly techniques;
- numerical ability to compute dimensions and locate reference points from specifications when laying out work;
- spatial perception to visualize the placement of structural members, the relative arrangement of static and moving parts and the complete assembly, as represented in blueprints and diagrams;
- form perception to monitor machine performance to detect malfunctions, to inspect finished assemblies, to read blueprints and to perform functional tests;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity

to use jigs, templates and hand and power tools with precision when drilling and riveting aircraft units and assemblies, and when assembling aircraft components;

- physical strength to perform light to medium work requiring frequent lifting and carrying of parts and tools weighing up to twenty pounds;
- agility to climb ladders and balance on scaffolding, and to work in awkward positions such as crouching or kneeling while reaching for component parts and using tools;
- near visual acuity to assemble and align small parts;
- capacity to work while exposed to loud intermittent or continuous noises from machinery or power tools.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- nine to twelve years of general education;

- three months to two years of on-the-job training, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to occupations requiring higher skills within this chapter. Those with supervisory potential may also advance to 8510-110 FOREMAN, AIRCRAFT ASSEMBLY. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to other occupations requiring similar basic skills within this chapter, or with limited additional training, to appropriate occupations in Chapters 8511, ENGINE AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C., and 8526, INSPECTING AND TESTING OCCUPATIONS, FABRICATING AND ASSEMBLING METAL PRODUCTS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects such as parts and tools;
- work leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as assembling units according to specifications;
- work involving the precise attainment of set limits, tolerances or standards, such as working to close tolerances in the assembly of aircraft.

INDUSTRIAL, FARM, CONSTRUCTION AND OTHER MECHANIZED EQUIPMENT AND MACHINERY FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with fabricating and assembling industrial, farm, and construction machinery and other mechanized equipment. Worker functions include: working to close tolerances when fitting, aligning and adjusting parts; manipulating hand and power tools to fasten parts together; and compiling and analyzing data from drawings or work orders to determine assembly specifications and procedures. Work activities include: laying out reference points and lines on structural parts; filing, grinding, lapping or scraping facing parts to ensure proper fit; bolting, screwing, riveting, welding, shrink-fitting or press-fitting parts together; installing piping for steam, hydraulic, cooling or lubrication systems; testing performance of completed units; and making adjustments as required.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8523-110	PROTOTYPE BUILDER (mech. equip., n.e.c.; motor vehicle)	4	8	8523-122	PIPE FITTER, TURBINES (mech. equip., n.e.c.)	4	7
8523-114	LOCOMOTIVE BUILDER (rail. rolling stock)	4	7	8523-126	ATOMIC-FUEL-BUNDLE ASSEMBLER (metal fab., n.e.c.)	3	6
8523-118	MACHINE BUILDER (mech. equip., n.e.c.)	4	7	8523-130	PIPE FITTER, RAILWAY CAR AND LOCOMOTIVE (rail. rolling stock)	3	6

B

		GED	SVP			GED	SVP
8523-134	GEARCASE ASSEMBLER (mech. equip., n.e.c.)	3	4	8523-154	RAILWAY-CAR-TRUCK ASSEMBLER (rail. rolling stock)	2	3
8523-138	FARM-MACHINERY ASSEMBLER (mech. equip., n.e.c.)	2	3	8523-158	SEWING-MACHINE ASSEMBLER (mech. equip., n.e.c.)	2	3
8523-142	FARM-MACHINERY DISMANTLER (mech. equip., n.e.c.)	2	3	8523-162	SNOWMOBILE ASSEMBLER (motor vehicle)	2	3
8523-146	GARDEN-MACHINERY ASSEMBLER (mech. equip., n.e.c.)	2	3	8523-166	RAILWAY-CAR LINER (rail. rolling stock)	2	2
8523-150	RAILWAY-CAR TRIMMER (rail. rolling stock)	2	3				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M-H 2347	I 56	4-3	8-6	190	Y01	
			<u>4</u>	<u>2</u>							5							
B	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 347	I 5	2	3-2	139	2Y	
			5			4	<u>4</u>	<u>3</u>		5							2Y3	

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

— learning ability to understand and apply principles and practices of

assembling motorized machinery and equipment and to follow instructions concerning sequence of assembly;

— numerical ability to apply shop mathematics to solve practical problems such as computing dimensions;

- spatial perception to visualize from diagrams and specifications the arrangement and relationship of parts and assemblies and their proper functioning;
- form perception to observe details such as irregularities in shape, size and finish of parts;

B

- learning ability to understand the procedures for assembling machinery and equipment;
- spatial perception to visualize correct assembly procedures for parts and subassemblies from drawings and the relationship of parts to each other;
- form perception to perceive pertinent detail in parts and assemblies such as proper alignment, spacing, clearances and size.

All workers in this chapter also require:

- eye-hand-finger co-ordination and manual dexterity to place and fit parts and assemblies in position and to use hand and power tools skilfully and quickly;

- finger dexterity to manipulate small objects rapidly and accurately when measuring, installing, aligning and adjusting parts or components;
- physical strength to perform medium to heavy work requiring frequent lifting of parts and subassemblies weighing up to fifty pounds;
- capacity to stoop, kneel, crouch or crawl under, around or on top of machinery and equipment to reach particular work areas;
- capacity to reach for and handle parts, tools, controls and measuring instruments and to feel edges or surfaces to detect burrs and rough areas;
- near visual acuity and depth perception to fit and align parts and components;
- adaptability to working in close proximity to noises from pneumatic wrenches, power drills and welding equipment;
- adaptability to working conditions where the individual is exposed to various mechanical hazards such as moving mechanisms and slipping tools.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- for some occupations, a two to four-year apprenticeship program which may be provincially regulated, and one or more years of on-the-job training;

- completion of certification requirements;
- for other occupations, six months to two years of on-the-job training.

B

- eight to ten years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and additional training, workers in Cluster B may advance to other occupations requiring higher skills within that cluster or to some occupations in Cluster A. Those with supervisory potential may also advance to 8510-122 FOREMAN, INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY ASSEMBLY. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Advancement possibilities may also be to appropriate occupations in Chapter 8526, INSPECTING AND TESTING OCCUPATIONS, FABRICATING AND ASSEMBLING METAL PRODUCTS, N.E.C.

Transfer

Some possibilities for transfer may be to other occupations requiring similar basic skills within the chapter. Transfers may also be possible to appropriate occupations in Chapters 8584, INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY MECHANICS AND REPAIRMEN; and 8791, PIPEFITTING, PLUMBING AND RELATED OCCUPATIONS, N.E.C.; or Minor Group 851/852 FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques;
- activities resulting in tangible, productive satisfaction.

Temperaments

- the precise attainment of set limits, tolerances of standards;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change.

B

Interests

- dealing with things and objects;
- routine, concrete and organized work;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

BUSINESS AND COMMERCIAL MACHINES FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with fabricating and assembling typewriting, calculating, bookkeeping, adding, duplicating and other business and commercial machines. Worker functions include: manipulating hand and power tools, test equipment controls and measuring instruments to assemble machines; working precisely when fitting parts and adjusting mechanisms; compiling data from drawings, diagrams or inspection reports to determine assembly or adjustment procedures; and comparing operation of completed machines to specified standards. Work activities include: positioning and fitting, screwing, bolting or riveting parts or subassemblies together; and testing machines to ensure proper operation.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8525-110	ADJUSTER, KEYBOARD MACHINES (mech. equip., n.e.c.)	3	6	8525-130	VENDING-MACHINE ASSEMBLER (mech. equip., n.e.c.)	3	4
8525-114	PERIPHERAL-EQUIPMENT ASSEMBLER (mech. equip., n.e.c.)	3	6	8525-134	PERIPHERAL-EQUIPMENT SUBASSEMBLER (mech. equip., n.e.c.)	2	3
8525-118	TYPEWRITER ALIGNER (mech. equip., n.e.c.)	3	6	8525-138	TYPE-BAR-AND-SEGMENT ASSEMBLER (mech. equip., n.e.c.)	2	3
8525-122	DUPLICATING-MACHINE ASSEMBLER (mech. equip., n.e.c.)	3	5	8525-142	TYPEWRITER-PARTS SALVAGE MAN (mech. equip., n.e.c.)	2	3
8525-126	KEYBOARD-MACHINE ASSEMBLER (mech. equip., n.e.c.)	3	4				

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 47	I	3-2	6-3	19	0Y	
<u>4</u>	3	3	<u>4</u>													Y02	

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the interrelationship and functioning of machine parts, and to apply appropriate fabricating and assembling techniques;
- spatial perception to visualize the arrangement of parts and appropriate assembly procedures from drawings or work instructions;
- form perception to adjust clearances, tension, alignment and synchronization of machine parts;

- eye-hand-finger co-ordination and manual dexterity to use hand and power tools, measuring devices and precision instruments when assembling and adjusting various machines;
- finger dexterity to manipulate small machine parts such as screws and keys and to connect wiring;
- physical capacity to perform light to medium work requiring the frequent lifting of objects weighing up to twenty pounds;
- near visual acuity to assemble small parts;
- colour vision to distinguish colour-coded wiring.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- nine to eleven years of general education;

- two months to two years of related experience and on-the-job training, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Some experienced workers may, with additional training, advance to other occupations within this chapter or to occupations concerned with inspecting, testing or repairing business machines, such as 8526-262 TYPEWRITER INSPECTOR, PARTS AND ASSEMBLIES and 8585-118 OFFICE-MACHINE SERVICEMAN. Those with supervisory potential may advance to 8510-114 FOREMAN, BUSINESS AND COMMERCIAL MACHINES ASSEMBLY. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Because of basic similarities in work performed, transfer possibilities may be to other occupations within the chapter. With limited additional training, transfer may also be possible to electrical or electronic equipment assembling occupations, such as 8531-148 ASSEMBLER, PORTABLE-ELECTRICAL APPLIANCE and 8534-122 ASSEMBLER, ELECTRONIC EQUIPMENT.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work carried on in relation to processes, machines and techniques.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example, verifying clearance of parts using feeler gauges;
- the precise attainment of set limits, tolerances or standards.

INSPECTING AND TESTING OCCUPATIONS, FABRICATING AND ASSEMBLING METAL PRODUCTS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with quality-control activities in the fabrication and assembly of a wide variety of products, primarily made of metal, such as motor vehicles, engines and accessories, aircraft, business machines, precision instruments and industrial, farm and construction machinery. Worker functions include: compiling pre-inspection information from specifications and analyzing data obtained as a result of examinations and tests; working to close tolerances when measuring parts and testing performance of equipment; comparing structural and functional characteristics of finished products to specification or established standards; manipulating measuring instruments or controls of equipment during tests; tending specialized production test equipment; handling articles during inspection procedures and recording findings and recommendations on data sheets. Work activities include: studying drawings, work orders and instruction manuals to determine inspection or testing requirements; driving motor vehicles or operating equipment and machinery to detect performance defects; testing firearms; inspecting metal furniture for faulty material or workmanship; conducting destructive tests on products such as wire rope; and operating business machines to evaluate their performance.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8526-236	MACHINE TRY-OUT MAN (metal fab., n.e.c.)	4	8	8526-202	ENGINE-QUALITY-CONTROL INSPECTOR (mech. equip., n.e.c.; motor vehicle)	4	6
8526-238	TURBINE INSPECTOR AND TESTER (mech. equip., n.e.c.)	4	8	8526-110	FINAL INSPECTOR, TRUCK TRAILER (motor vehicle)	4	6
8526-194	DYNAMOMETER TESTER, ENGINES (mech. equip., n.e.c.; motor vehicle)	4	7	8526-250	MAJOR-ASSEMBLY INSPECTOR (mech. equip., n.e.c.)	4	6
8526-198	PROTOTYPE TESTER, OUTBOARD MOTORS (mech. equip., n.e.c.)	4	7	8526-254	WATCH INSPECTOR (scient. & ind. equip., n.e.c.)	4	6
8526-242	AIRCRAFT INSPECTOR, ASSEMBLIES AND INSTALLATIONS (air & space- craft)	4	7	8526-262	TYPEWRITER INSPECTOR, PARTS AND ASSEMBLIES (mech. equip., n.e.c.)	3	6
8526-246	INSTRUMENT INSPECTOR AND TESTER (scient. & ind. equip., n.e.c.)	4	7	8526-278	GASOLINE-PUMP TESTER (mech. equip., n.e.c.)	3	5

B

		GED	SVP			GED	SVP
8526-258	HYDRAULIC TESTER (air & space- craft)	4	6	8526-118	AUTOMOBILE INSPECTOR AND TESTER (motor vehicle; ret. trade)	3	5
8526-114	TEST DRIVER (motor vehicle)	3	6	8526-282	PURCHASED-METAL-PARTS INSPECTOR (any ind.)	3	5
8526-266	AGRICULTURAL-EQUIPMENT INSPECTOR (mech. equip., n.e.c.)	3	6	8526-122	ENGINE TESTER (motor vehicle)	3	5
8526-270	BUSINESS-MACHINES TESTER (misc. prod. fab., n.e.c.)	3	6	8526-206	OUTBOARD-MOTOR INSPECTOR AND TESTER (mech. equip., n.e.c.)	3	5
8526-154	FIREARMS INSPECTOR (sport. & toy)	3	6	8526-286	PHOTOGRAPHIC-EQUIPMENT INSPECTOR (scient. & ind. equip., n.e.c.)	3	5
8526-274	TENSILE-STRENGTH TESTER (gov. serv.; wire prod.)	3	6				

		GED	SVP			GED	SVP
8526-290	SALVAGE INSPECTOR, INSTRUMENTS (scient. & ind. equip., n.e.c.)	3	5	8526-306	BICYCLE INSPECTOR (sport & toy)	3	4
8526-126	SNOWMOBILE INSPECTOR (motor vehicle)	3	5	8526-214	TRANSMISSION TESTER (mech. equip., n.e.c.; motor vehicle)	3	4
8526-294	VENDING-MACHINE TESTER (misc. prod. fab., n.e.c.)	3	5	8526-218	CLUTCH INSPECTOR (mech. equip., n.e.c.; motor vehicle)	3	4
8526-210	ENGINE-ACCESSORIES INSPECTOR (air & space- craft; mech. equip., n.e.c.; motor vehicle)	3	5	8526-158	SMALL-ARMS TESTER (sport. & toy)	2	5
8526-298	MATRIX INSPECTOR, PHONOGRAPH RECORDS (misc. prod. fab., n.e.c.)	3	4	8526-314	SEWING-MACHINE TESTER (mach. equip., n.e.c.)	3	3
8526-302	TYPEWRITER TESTER (mech. equip., n.e.c.)	3	4	8526-318	PRESSURE-SWITCH TESTER (mech. equip., n.e.c.; scient. & ind. equip., n.e.c.)	3	3
				8526-162	AMMUNITION-SALVAGE INSPECTOR (explosives)	2	3

C

		GED	SVP			GED	SVP
8526-130	FINAL INSPECTOR, AUTOMOBILE (motor vehicle)	3	5	8526-170	CARTRIDGE EXAMINER (explosives)	2	2
8526-310	METAL-FURNITURE INSPECTOR (furn.)	3	4	8526-330	HARDWARE, TOOL AND CUTLERY INSPECTOR (metal fab., n.e.c.)	2	2
8526-166	BULLET AND CARTRIDGE- INSPECTOR (explosives)	2	3	8526-334	STRUCTURAL AND ORNAMENTAL-METALWORK INSPECTOR (struct., plate & ornam. metal)	2	2
8526-322	TIME TESTER, WATCHES (scient. & ind. equip., n.e.c.)	2	3	8526-134	WATER-LEAK EXAMINER (motor vehicle)	2	2
8526-326	BALL-BEARINGS TESTER (mech. equip., n.e.c.)	2	2				
8526-174	SHOTGUN-PROOF TESTER (sport. & toy)	2	2				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 347	I 5	4-3	8-5	91	0Y	
				<u>3</u>	<u>3</u>			<u>4</u>		4	4							
B	3	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-M 467	I 5	4-3	6-3	91	0Y	
	4	3	<u>3</u>	<u>3</u>	<u>4</u>		<u>3</u>		<u>4</u>	4	4							
C	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	S-M 47	I 5	3-2	5-2	193	Y23	
			5		<u>3</u>	5	<u>3</u>				4							

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand operating manuals, specifications and technical drawings, and to understand and apply the principles and precise techniques used in inspecting and testing metal products, parts and assemblies;
- numerical ability to make accurate calculations when checking measurements and recording test data;
- spatial perception to visualize the relationships of mechanical components from two dimensional drawings;
- finger dexterity to manipulate small measuring instruments, gauges and parts;
- ability to kneel, crouch and stoop to place or test mechanisms.

B

- learning ability to understand and use inspecting and testing techniques to examine quality of specific metal products;
- numerical ability to make accurate calculations quickly when measuring components and recording test data;
- spatial perception to visualize arrangement of parts in assemblies from drawings and other specifications;
- good hearing to listen for unusual mechanical noises;
- adaptability to a noisy environment.

C

- learning ability to understand and apply routine inspection and test procedures.

All workers in this chapter also require:

CHAPTER 8526

- form perception to note irregularities in size, shape, finish and alignment of metal components and assemblies, and detail in mechanical drawings;
- eye-hand-finger co-ordination and manual dexterity to operate and manipulate test instruments and hand tools and to handle products;

- capacity to perform light to medium work, requiring frequent lifting and carrying of metal products or test equipment weighing from ten to twenty pounds, with occasional lifting of objects up to fifty pounds;
- near visual acuity, depth perception and colour vision to inspect or examine shapes, sizes and finish of metal products.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- for some occupations, a four-year apprenticeship program as mechanic or machinist, and one or more years of on-the-job training, depending on the product being inspected or tested.
- for other occupations, six months to two years of on-the-job training and experience.

B

- eight to eleven years of general education;
- three months to two years of on-the-job training and related experience.

C

- eight to ten years of general education;
- one month to one year of on-the-job training, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and additional training, workers in this chapter may advance to higher skilled occupations within their own cluster, or from Cluster C to B and to A. Those with supervisory potential may also advance to appropriate occupations in Volume I, Unit Group 8510, FOREMEN, FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

With limited additional training, some workers in this chapter may transfer to other occupations requiring similar skills within their individual cluster. Transfer possibilities may also be to appropriate occupations requiring similar experience and basic skills elsewhere in Volume I, for example Minor Group 851/852 FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster C:

- routine, concrete and organized work.

Temperaments

A and B

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

C

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

PRECISION INSTRUMENTS AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with fabricating and assembling precision instruments and related equipment, such as scientific and optical instruments, measuring, indicating and controlling devices, surgical, medical and dental apparatus, photographic equipment, time-pieces and similar items. Worker functions include: working to close tolerances while assembling and adjusting parts and assemblies to ensure precise alignment, calibration and function; manipulating hand and power tools while positioning components and fitting and securing parts; compiling information from specifications and other instructions concerning assembly procedures; and comparing the performance of finished items to specification requirements. Work activities include: assembling cams, gears, shafts, plates, dials, pointers and other parts of mechanisms; joining or securing parts by clamping, soldering, bolting, pressing, staking, screwing or riveting; drawing scale markings on instrument dials by hand; and calibrating and adjusting finished instruments and components, such as scales, gauges, switches and hairsprings.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8527-110	SCALE CALIBRATOR (scient. & ind. equip., n.e.c.)	4	7	8527-122	HAIRSPRING TRUER (scient. & ind. equip., n.e.c.)	3	5
8527-114	INSTRUMENT-PANEL ASSEMBLER-INSTALLER (air & space-craft)	4	6	8527-126	LASER-TUBE ASSEMBLER (scient. & ind. equip., n.e.c.)	3	5
8527-118	SCALE ASSEMBLER (scient. & ind. equip., n.e.c.)	3	6	8527-130	TEMPERATURE-CAPILLARY CHARGER (scient. & ind. equip., n.e.c.)	3	5

B

		GED	SVP			GED	SVP
8527-134	AUTOMATED-VALVE ASSEMBLER (scient. & ind. equip., n.e.c.)	3	4	8527-170	CLOCK AND WATCH FINISHER (scient. & ind. equip., n.e.c.)	2	3
8527-138	CLOCK AND WATCH ASSEMBLER (scient. & ind. equip., n.e.c.)	3	4	8527-174	COMPRESSED-AIR-AND-GAS- REGULATOR ASSEMBLER (scient. & ind. equip., n.e.c.)	2	3
8527-142	HEAT-SENSOR ASSEMBLER (scient. & ind. equip., n.e.c.)	3	4	8527-178	DIAL INSTALLER, CLOCK AND WATCH (scient. & ind. equip., n.e.c.)	2	3
8527-146	PUT-IN-BEAT ADJUSTER (scient. & ind. equip., n.e.c.)	3	4	8527-180	DIAL MARKER (scient. & ind. equip., n.e.c.)	2	3
8527-150	THERMOSTAT-AND-PRESSURE- SWITCH CALIBRATOR (scient. & ind. equip., n.e.c.)	3	4	8527-182	ELECTRIC-CLOCK ASSEMBLER (scient. & ind. equip., n.e.c.)	2	3
8527-154	DIE-CASTING ASSEMBLER, CLOCK PARTS (scient. & ind. equip., n.e.c.)	2	4	8527-186	HAIRSPRING CALIBRATOR (scient. & ind. equip., n.e.c.)	2	3
8527-158	PHOTOGRAPHIC-EQUIPMENT ASSEMBLER (scient. & ind. equip., n.e.c.)	2	4	8527-188	STAKER, SMALL PARTS (scient. & ind. equip., n.e.c.)	2	3
8527-162	SOLENOID-VALVE ASSEMBLER (scient. & ind. equip., n.e.c.)	2	4	8587-122T	CASER (scient. & ind. equip., n.e.c.)	2	3
8527-166	CLOCK-AND-TIMER-MOVEMENT ASSEMBLER, AUTOMATED LINE (scient. & ind. equip., n.e.c.)	2	3	8527-190	LEVEL-VIAL SETTER (misc. prod. fab., n.e.c.)	2	2
				8527-192	PRECISION-PRESS OPERATOR (scient. & ind. equip., n.e.c.)	2	2
				8527-194	REGULATOR, TIMEPIECE (scient. & ind. equip., n.e.c.)	2	2
				8527-198	THERMOSTAT-CAPILLARY SEALER (scient. & ind. equip., n.e.c.)	2	2

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S-L 47	I 6	4-3	7-5	190	0Y1
		4	3	<u>3</u>		5		<u>2</u>			5					19	0Y
B	4	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	S-L 47	I	3-2	4-2	139	0Y2
						5				4	4						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability for occupations in Cluster A, to understand mechanical theory and instructions, and to apply the methods and procedures for fabricating and assembling complicated instruments and equipment, and for occupations in Cluster B to understand and apply routine instructions, methods and procedures for assembling, testing and adjusting parts and assemblies;
- spatial perception to visualize how components fit together, their position and the relationships to moving and fixed parts;
- form perception to observe pertinent detail in parts, such as length of springs, trueness in seating and shape of circular coils, loose connections, burrs or other irregularities on surfaces of minute parts;

- eye-hand-finger co-ordination to accurately assemble and position parts and use wrenches, pliers, tweezers, soldering irons and other hand tools;
- finger dexterity to rapidly and accurately manipulate, position and secure hairsprings, mainsprings, balance wheels, hour hands and other small parts of instruments;
- manual dexterity to skilfully assemble, install and screw, bolt, rivet or otherwise secure items in position;
- near visual acuity to position minute parts and to accurately calibrate instruments;

Additionally, for Cluster B:

- eye-hand-foot co-ordination for occupations involving the operation of machines and presses equipped with hand and foot controls.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten or more years of general education, preferably with emphasis on mathematics and technical subjects;

- six months to three years of on-the-job training and related experience, depending on the occupation.

B

- eight to ten years of general education;
- one to six months of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may advance to other occupations requiring higher skills within their individual cluster or from Cluster B to A. Advancement for experienced workers may also be to appropriate occupations in Volume I, Unit Group 8510, FOREMEN, FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in Cluster B may transfer to other occupations requiring similar skills within that cluster. Experienced workers may, with limited additional training, also transfer to some occupations within their individual cluster or from Cluster B to A. Possibilities for transfer may also be to appropriate occupations requiring similar basic skills in other chapters of Minor Group 851/852, FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

Additionally, for Cluster B:

- repetitive or short cycle operations carried out according to set procedures or sequences.

OTHER FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with fabricating and assembling a variety of metal products.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
Wire Products Fabricating and Assembling Occupations, n.e.c.																		
8529-110	CYLINDER-ROLL FABRICATOR (wire prod.)	<u>3</u>	4	4	4	<u>2</u>	4	<u>3</u>	4	<u>3</u>	5	4	M 347	I	3	7	19	Y0
8529-114	MESH-WELDING-MACHINE OPERATOR (wire prod.)	4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 234	I 56	3	4	91	0Y
8529-118	STEEL-WOOL-MACHINE OPERATOR (wire prod.)	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	4	5	M 4	I	3	4	913	20Y
8529-122	WIRE-CONVEYOR-BELT BUILDER (wire prod.)	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	H 4	I	2	3	319	2Y
8529-126	WIRE-MESH-GATE ASSEMBLER (wire prod.)	4	4	4	<u>4</u>	4	4	<u>4</u>	4	<u>3</u>	5	5	M 4	I	2	3	319	2Y
Ammunition Fabricating and Assembling Occupations, n.e.c.																		
8529-146	SALVAGE-MACHINE OPERATOR (explosives)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L	I 56	3	4	91	2Y
8529-150	BURNING-GROUND ATTENDANT (explosives)	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>4</u>	4	4	H 4	O 6	2	3	31	28Y
8529-154	METALLIC-CUP-MACHINE TENDER (explosives)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>4</u>	4	5	M 4	I 5	2	3	319	2Y
8529-158	SHAKER-PLATE TENDER (explosives)	4	4	4	4	<u>3</u>	4	<u>4</u>	<u>3</u>	<u>4</u>	5	5	L 47	I 56	2	2	319	2Y
Miscellaneous Metal Products Fabricating and Assembling Occupations, n.e.c.																		
8529-178	DIAMOND-SAW MAKER (metal fab., n.e.c.)	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>2</u>	<u>3</u>	<u>3</u>	4	4	M 47	I 5	4	7	91	Y0
8529-182	GUN ASSEMBLER (metal fab., n.e.c.)	3	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I	3	6	19	0Y
8529-186	CASKET ASSEMBLER, METAL (metal fab., n.e.c.)	3	4	4	<u>4</u>	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	5	H 347	I 5	3	6	19	Y0
8529-190	METAL-SHEATHED-INSULATION MAKER (asbestos & min. wool)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	M 4	I 56	3	4	91	2Y
8529-194	FURNITURE ASSEMBLER, METAL (furn.)	4	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>4</u>	5	5	M 4	I	3	4	13	2Y
8529-198	METAL-PRODUCTS ASSEMBLER (struct., plate & ornam. metal)	4	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 4	I	3	4	19	2Y
8529-202	ARBOR-PRESS TENDER (any ind.)	4	4	4	<u>4</u>	4	4	<u>3</u>	4	<u>3</u>	4	5	M 4	I	3	4	139	20Y
8529-206	BEARING ASSEMBLER (metal fab., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	3	3	139	2Y
8529-210	SPOKE-WHEEL ASSEMBLER (motor vehicle)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 4	I	2	4	319	20Y
8529-214	GUN SUBASSEMBLER (metal fab., n.e.c.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	2	3	139	2Y
8529-218	AIR-CONDITIONING-COIL ASSEMBLER (mech. equip., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 4	I 4	2	3	139	2Y
8529-222	PRODUCT ASSEMBLER, METAL (any ind.)	4	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 4	I	2	3	139	2Y
8529-226	VENETIAN-BLIND ASSEMBLER (misc. prod. fab., n.e.c.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 4	I	2	3	13	23Y
8529-228	CARBIDE-PRESS TENDER (metal fab., n.e.c.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>4</u>	5	5	M 47	I 56	2	3	319	23Y

GROUP 8529

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS															
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C					
8529-230	COUPLING-MACHINE TENDER (iron & steel)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	4	4	M 4	I 567	2	2	319 23Y
8529-234	KNITTING-NEEDLE-MACHINE FEEDER (misc. prod. fab., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>4</u>	5	5	L 47	I 56	2	2	31 23
8529-238	ASSEMBLER, FILTERS (misc. prod. fab., n.e.c.; motor vehicle)	4	4	5	<u>4</u>	4	5	<u>4</u>	<u>4</u>	<u>4</u>	5	5	L 4	I	2	2	31 23
8529-242	BABY-CARRIAGE ASSEMBLER (misc. prod. fab., n.e.c.)	4	4	5	<u>4</u>	4	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 4	I	2	2	319 23
8529-246	STRETCHER, BEDSPRING (furn.)	4	4	5	4	4	5	<u>3</u>	4	<u>3</u>	5	5	M 4	I	2	2	31 23

ELECTRICAL EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with fabricating and assembling electrical products and equipment such as motors, transformers, batteries, light bulbs and air conditioners, refrigerators and other electrical household appliances. Worker functions include: manipulating hand tools, power tools, soldering equipment and testing devices during assembly operations; working to close tolerances when fitting, aligning and adjusting parts; setting up, operating or tending equipment such as coil-welding machines, pasting machines and impregnating tanks; compiling and analyzing data from drawings, work orders or specifications to determine fabrication or assembly procedures; comparing electrical and structural characteristics of completed products to ensure specified standards are met and handling parts and materials during fabrication processes. Work activities include: positioning parts in specified relationship to each other using hands, tweezers or fixtures; bolting, screwing, soldering, welding or otherwise fastening parts together; installing wiring; and testing completed units for defective operation.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8531-244 SET-UP MAN, LAMP-MAKING MACHINES (electric. equip.)

4 7

B

GED SVP

8531-110 FITTER-ASSEMBLER, ENVIRONMENTAL CHAMBER (mech. equip., n.e.c.)

4 7

8531-292 ASSEMBLER, AUXILIARY-POWER AND MOTOR-GENERATOR-SET (electric. equip.)

4 7

8531-388 ASSEMBLER, HEAVY-DUTY TRANSFORMER (electric. equip.)

4 7

8531-384 FITTER-ASSEMBLER, ELECTRICAL-CONTROL EQUIPMENT (electric. equip.)

4 7

8531-296 ASSEMBLER, MOTOR AND GENERATOR (electric. equip.)

4 6

8531-248 ASSEMBLER, ELECTRIC SIGN (electric. equip.)

3 5

8531-392 CALIBRATOR, ELECTRICAL CONTROLS (electric. equip.)

3 5

C

GED SVP

8531-304 ARMATURE BANDER (electric. equip.)

3 6

8531-308 COIL WINDER (electric. equip.)

3 6

8531-168 PLATE FORMER, LEAD-ACID STORAGE BATTERY (electric. equip.)

3 5

8531-396 ASSEMBLER, HEAVY-DUTY CAPACITORS (electric. equip.)

3 5

8531-400 HEATING-ELEMENT COIL FORMER (electric. equip.)

3 5

8531-404 IMPREGNATOR, ELECTRICAL EQUIPMENT (electric. equip.)

3 5

8531-172 BATTERY-PLATE STACKER, MACHINE (electric. equip.)

3 4

8531-176 PASTING-MACHINE OPERATOR (electric. equip.)

3 4

8531-320 UNDERCUTTING-MACHINE OPERATOR (electric. equip.)

3 4

D

GED SVP

8531-300 COIL INSTALLER, MOTOR AND GENERATOR (electric. equip.)

4 6

8531-114 ASSEMBLER, COMMERCIAL REFRIGERATOR (mech. equip., n.e.c.)

3 5

CHAPTER 8531

		GED	SVP			GED	SVP
8531-312	ASSEMBLER, CARBON BRUSHES (electric. equip.)	3	5	8531-256	ASSEMBLER, LIGHT FIXTURES (electric. equip.)	3	3
8531-408	ASSEMBLER, ELECTRICAL METERS (electric. equip.)	3	5	8531-344	COIL SHAPER (electric. equip.)	3	3
8531-316	COIL FORMER, HEAVY-DUTY (electric. equip.)	3	5	8531-144	ELECTRICAL-APPLIANCE SET-UP MAN (electric. equip.)	3	3
8531-180	ASSEMBLER, STORAGE BATTERY (electric. equip.)	3	4	8531-424	MICA-PRODUCTS MAKER (electric. equip.)	2	4
8531-324	ASSEMBLER, COMMUTATOR (electric. equip.)	3	4	8531-260	ASSEMBLER, BALLAST TRANSFORMER (electric. equip.)	2	3
8531-412	ASSEMBLER, ELECTRICAL ACCESSORIES (electric. equip.)	3	4	8531-264	ASSEMBLER, LIGHT BULB (electric. equip.)	2	3
8531-142	ASSEMBLER, ELECTRICAL APPLIANCES (electric. equip.)	3	4	8531-268	ASSEMBLER, MINIATURE BULB (electric. equip.)	2	3
8531-252	ASSEMBLER, QUARTZ LAMPS (electric. equip.)	3	4	8531-272	ASSEMBLER, MOTOR-VEHICLE- LIGHTING FIXTURES (electric. equip.)	2	3
8531-328	ASSEMBLER, ROTATING-FIELD COILS (electric. equip.)	3	4	8531-148	ASSEMBLER, PORTABLE- ELECTRICAL APPLIANCE (electric. equip.)	2	3
8531-332	COIL TAPER, HAND (electric. equip.)	3	4	8531-348	ASSEMBLER, SMALL-ELECTRIC MOTOR (electric. equip.)	2	3
8531-416	CORE MAKER, TRANSFORMER (electric. equip.)	3	4	8531-352	INSULATION CUTTER AND FORMER (electric. equip.)	2	3
8531-336	ARMATURE CONNECTOR (electric. equip.)	2	4	8531-356	LEAD FORMER (electric. equip.)	2	3
8531-122	ASSEMBLER, COOLING UNIT (mech. equip., n.e.c.)	3	3	8531-428	TUBULAR-HEATING ELEMENT MAKER (electric. equip.)	2	3
8531-420	ASSEMBLER, HEAVY-DUTY RESISTORS (electric. equip.)	3	3	8531-440	ASSEMBLER, THERMOSTAT (electric. equip.)	2	2
8531-184	ASSEMBLER, INDUSTRIAL- STORAGE-BATTERY-PLATES (electric. equip.)	2	4	8531-444	ASSEMBLER, TRANSFORMER- STATIC-PLATE (electric. equip.)	2	2
8531-340	ASSEMBLER, LAMINATED CORE (electric. equip.)	3	3				

E

		GED	SVP			GED	SVP
8531-118	GAS CHARGER, REFRIGERATION EQUIPMENT (mech. equip., n.e.c.)	3	3	8531-204	SEALER, DRY CELL (electric. equip.)	2	3
8531-188	FLAT-DRY-CELL-MACHINE TENDER (electric. equip.)	3	3	8531-432	TAPING-MACHINE TENDER (electric. equip.)	2	3
8531-200	BATTERY-PLATE WASHER AND DRIER (electric. equip.)	2	3	8531-208	CAPPING-MACHINE TENDER, DRY CELL (electric. equip.)	2	2
8531-360	COIL-WINDING-MACHINE TENDER, AUTOMATIC (electric. equip.)	2	3	8531-212	DRY-CELL TUBER, MACHINE (electric. equip.)	2	2
8531-192	COREMAKING-MACHINE TENDER, DRY BATTERY (electric. equip.)	2	3	8531-364	LAMINATION-STACKING- MACHINE TENDER (electric. equip.)	2	2

F

		GED	SVP			GED	SVP
8531-196	STORAGE-BATTERY CHARGER (electric. equip.)	2	3	8531-220	ASSEMBLER, FLAT-DRY-CELL- BATTERY (electric. equip.)	2	2
8531-216	ASSEMBLER, DRY CELL AND BATTERY (electric. equip.)	2	2	8531-436	ASSEMBLER, SPARK-PLUGS (electric. equip.)	2	2

		GED	SVP			GED	SVP
8531-448	CLAMPER, TRANSFORMER ASSEMBLY (electric. equip.)	2	2	8531-224	LEAD-ACID-BATTERY FILLER (electric. equip.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>2</u>	5	4	M 347	I 6	4	7	901	Y0	
B	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 347	I 6	4-3	7-5	901	Y0	
			4							4								
C	3	4	4	4	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	4	L-M 47	I 567	3	6-4	91	Y0	
	4			<u>3</u>	<u>4</u>			3		4	5							
D	4	4	4	4	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-M 47	I 6	4-2	6-2	19	Y20	
	3		5	3	<u>4</u>		4	4			5					193	2Y3	
E	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I 56	3-2	3-2	913	23Y	
										4								
F	4	4	5	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5	L-M 47	I 6	2	3-2	13	23Y	
								3	4									

APTITUDES AND CAPACITIES

Workers in A, B and C require:

- learning ability to understand the techniques for operating equipment used to fabricate component parts of electrical products, and to interpret production drawings and apply reasoning when following specifications or instructions for assembling and adjusting electrical equipment such as motors, generators and controls;
- spatial perception to visualize the arrangement of parts and configuration of finished articles from descriptive material and drawings;
- form perception to note poorly fitted assemblies, imperfections in finish, or other defects in equipment such as missing or incorrect parts;
- eye-hand-finger co-ordination to use hand tools to assemble and install components in electrical appliances and equipment and to make functional tests and adjustments;
- finger dexterity to pick up and install small parts such as screws, insulating washers, gaskets and terminal lugs;
- manual dexterity to position parts when setting up production equipment, assembling motors, generators and distribution panels, or when mounting switches and control units such as timers and thermostats;
- capacity to perform light to medium work involving frequent lifting of objects weighing up to twenty pounds;
- near visual acuity for assembly work, and normal colour vision to identify coded electrical wire;
- adaptability to working in situations where there is risk of injury from contact with operating machinery or burns from acid.

Additionally, for A and B:

- capacity to work in stooping, kneeling or crouching position when assembling or mounting equipment.

D

- learning ability to understand and apply assembly techniques and to use tools specified in drawings or instructions for the fabrication or fitting of parts used in electrical products such as switches, transformers, solenoids, armatures, circuit breakers, resistors, heating elements and thermostats;
- form perception to observe minor defects in items, such as distortion in storage battery plates and cracks in battery cases;

- eye-hand-finger co-ordination to use hand and power tools, hydraulic presses and welding or soldering equipment to assemble products;
- finger dexterity for activities such as winding coils for electric motors, assembling small lamp sockets and toggle switches, and mounting small accessories;
- manual dexterity to align and secure components in specified locations in refrigeration equipment, stoves, washers and driers, and other products or appliances;
- capacity to perform light to medium work requiring frequent lifting of objects weighing up to twenty pounds;
- near visual acuity for close up assembly work and normal colour vision to identify coded leads when wiring electrical appliances;
- adaptability to working in situations where there is a risk of injury from power tools, presses and production machines, or burns from welding and soldering.

E and F

- learning ability to understand and apply job instructions describing simple assembly operations, or procedures for tending machines;
- form perception to compare the shape or dimensions of articles being produced in order to correct faulty machine timing, improper positioning and trimming of parts, or sealing of units such as capacitors and dry-cells;
- eye-hand-finger co-ordination to align parts, spacers and insulators and insert screws or rivets;
- manual dexterity to load feeding mechanisms and make adjustments to machines used for fabricating parts or assembling products such as dry batteries;
- capacity to perform light to medium work involving frequent lifting of objects weighing up to twenty pounds;
- capacity to perform activities that involve reaching, for example, filling banks of storage batteries with electrolyte or feeding production machines;
- near visual acuity for close up work such as connecting groups of dry cells in series, or to ensure dry cells are being adequately sealed;
- for workers in E who make dry batteries, adaptability to working while exposed to noise and vibration from production machinery;
- adaptability to working in areas where there is possibility of injury from contact with operating machines or spilled electrolyte from storage batteries.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- twelve years of general education;
- two years of on-the-job training and up to two years of related experience.

B

- ten to twelve years of general education;
- from three months to two years of on-the-job training, depending on the complexity of the work.

C

- eight to ten years of general education;

- from three months to one year of on-the-job training.

D

- from eight to ten years of general education;
- from one to six months of on-the-job training.

E

- from eight to ten years of general education;
- from one week to three months of on-the-job training.

F

- eight years of general education;
- training ranging from a short demonstration, for some occupations and up to three months of on-the-job training for others.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to more highly skilled occupations within this chapter. Those with supervisory potential may advance to 8530-118 FOREMAN, ELECTRICAL EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers who assemble electrical equipment may transfer, because of similarity of work performed, to some occupations in other chapters which are concerned with the production, installation or repair of electrical or electronic equipment, for example, 8531-148 ASSEMBLER, PORTABLE-ELECTRICAL APPLIANCE may transfer to 8534-186 ASSEMBLER, RECORD CHANGER. Other workers may transfer to inspection work that is concerned with similar products, for example, 8531-142 ASSEMBLER, ELECTRICAL APPLIANCES may transfer to 8536-174 INSPECTOR, HOUSEHOLD APPLIANCE.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

A, B, C and D

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for workers in A and B:

- activities leading to satisfaction from tangible results.

E and F

- dealing with things and objects;
- routine, concrete and organized work.

Additionally, for workers in E:

- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

A, B and C

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

D, E and F

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

Additionally, for workers in E and F:

- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

ELECTRICAL AND RELATED EQUIPMENT, INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with installing and repairing electrical equipment such as lighting fixtures, motors and controls, domestic appliances, office machines, and automotive, aircraft, rail or marine electrical components and wiring. Worker functions include: working to close tolerances when measuring the characteristics of electrical circuits and adjusting equipment to ensure that operating specifications are met; manipulating tools, screws, wires and components when installing or removing and disassembling equipment for repair; analyzing data obtained by observation of equipment in operation, by examination of parts or from electrical tests; comparing conditions of units and results of tests with specifications and handling parts while cleaning and examining them prior to use. Work activities include: replacing defective items such as motor brushes, heating elements and relays; preparing and pulling wires through conduit; preparing and installing cable assemblies and wiring harnesses in aircraft, and equipment such as business machines; installing automobile ignition parts, bulbs and voltage regulators; replacing plates of large commercial storage batteries; cleaning and dismantling equipment for repair; and testing, topping up and recharging storage batteries.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8533-110	ELECTRICAL REPAIRMAN (electric. equip.)	4	7	8533-150	REPAIRMAN, REFRIGERATION UNIT (mech. equip., n.e.c.)	4	7
8533-114	ELECTRICIAN, AUTOMOTIVE (motor vehicle)	4	7	8533-154	INSTALLER AND REPAIRER, AUTOMATIC-PINSETTING MACHINE (electric. equip.; sport. & toy)	4	6
8533-122	REPAIRMAN, ELECTRIC MOTOR (electric. equip.)	4	7	8533-158	INSTALLER-SERVICEMAN, DENTAL EQUIPMENT (scient. & ind. equip., n.e.c.)	4	6
8533-126	REPAIRMAN, MAJOR APPLIANCE (electric. equip.)	4	7	8533-162	REPAIRMAN, AIR-CONDITIONER (electric. equip.)	4	6
8533-130	ELECTRICIAN, AIRCRAFT (electric. equip.)	4	7	8533-166	REPAIRMAN, ELECTRIC TOOL (electric. equip.)	4	6
8533-134	ELECTRICIAN, MARINE EQUIPMENT (electric. equip.)	4	7	8533-170	REPAIRMAN, PORTABLE APPLIANCE (electric. equip.)	4	6
8533-138	ELECTRICIAN, RAIL TRANSPORT (electric. equip.)	4	7	8533-174	REPAIRMAN, STORAGE BATTERY (electric. equip.)	3	6
8533-142	REPAIRMAN, ELECTRICAL INSTRUMENTS (electric. equip.)	4	7				
8533-146	WIRER AND REPAIRMAN, OFFICE MACHINES (electric. equip.)	4	7				

B

		GED	SVP			GED	SVP
8533-178	INSTALLATION MAN, HOUSEHOLD APPLIANCE (electric. equip.)	3	6	8533-198	TRANSFORMER-COIL WINDER (electric. equip.)	3	5
8533-186	ARMATURE WINDER, REPAIR (electric. equip.)	3	5	8533-202	REPAIRMAN, ELECTRIC SIGN (electric. equip.)	3	4
8533-190	BATTERY REPAIRMAN, PRODUCTION LINE (electric. equip.)	3	5	8533-204	INSTALLER, DOMESTIC AIR- CONDITIONER (electric. equip.)	3	4
8533-194	COIL WINDER AND REPAIRER (electric. equip.)	3	5	8533-206	WIREMAN, AUTOMOTIVE (motor vehicle)	3	4
				8533-210	APPLIANCE REPAIRMAN, PRODUCTION LINE (electric. equip.)	3	3

C

		GED	SVP			GED	SVP
8533-214	ELECTRICAL REPAIRMAN HELPER (electric. equip.)	3	3	8533-226	ELECTRIC-TRUCK SERVICEMAN (electric. equip.)	2	3
8533-218	ELECTRICIAN HELPER, AUTOMOTIVE (motor vehicle)	3	3	8533-230	ELECTRIC-MOTOR-REPAIRMAN HELPER (electric. equip.)	2	3
8533-222	DOMESTIC-AIR-CONDITIONER- REPAIRMAN HELPER (electric. equip.)	2	3				

N.B. Occupations 8533-118 REFRIGERATION MECHANIC (mech. equip., n.e.c.) and 8533-234 REFRIGERATION-MECHANIC HELPER (mech. equip., n.e.c.) have been transferred, for Volume II purposes, to Chapter 8799C, COMMERCIAL AND INDUSTRIAL AIR-CONDITIONING AND REFRIGERATION MECHANICS.

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-M 347	I 6	4-3	7-6	910	Y01	
				<u>2</u>	<u>2</u>					4								
B	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	L-H 347	I 6	3	6-3	19	Y0	
				<u>4</u>	<u>4</u>	5	<u>4</u>	<u>3</u>		4	5							
C	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	4	4	M-H 347	I-B 6	3-2	3	139	23Y	
			5				<u>3</u>			5	5							

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to acquire and apply knowledge of electrical theory, to understand and follow technical instructions, and reasoning ability to diagnose equipment malfunctions based on test results and other data;
- spatial perception to visual equipment layout or the relationship of parts from circuit diagrams or drawings;
- form perception to recognize structural or mechanical defects in electrical equipment;
- eye-hand-finger co-ordination and manual dexterity to handle parts and to use hand tools, power tools and test equipment;
- finger dexterity to pick up and install small parts such as springs, split-pins and spacers.

B

- learning ability to understand and follow instructions furnished in written or diagrammatic form, which frequently require a general knowledge of electrical theory;
- spatial perception to visualize relationship of parts or repair work required, from drawings, wiring diagrams or work orders;
- form perception to detect defects in parts or equipment;
- eye-hand-finger co-ordination and manual dexterity to handle parts and tools and to operate machine controls;

- finger dexterity to pick up and install small parts such as carbon brushes, brush springs and brush caps.

C

- learning ability to understand and follow instructions furnished in oral or written form;
- spatial perception to note the relationship of parts before disassembly operations;
- form perception for such activities as detecting defective components and cleaning parts;
- eye-hand-finger co-ordination and manual dexterity to handle parts and tools;
- finger dexterity to pick up and position small parts.

All workers in this chapter also require:

- strength, depending on the occupation involved, to perform light to heavy work involving the handling of tools and the lifting of equipment weighing up to one hundred pounds;
- capacity to work in stooping, kneeling or crouching positions when installing or repairing electrical equipment;
- good hearing to recognize sounds that indicate equipment malfunction;
- colour vision to identify colour-coded wires;
- adaptability to working in situations involving exposure to high-voltage wiring and possible falls from ladders.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- a three to four-year apprenticeship program, or similar form of on-the-job training. Apprenticeships are normally provincially regulated;
- completion of certification requirements.

B

- ten years of general education, preferably with some technical orientation;
- three months to two years of on-the-job training.

C

- eight to ten years of general education;
- one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers who acquire experience and additional training may advance from occupations in Cluster C to B and to A, for example, 8533-230 ELECTRIC-MOTOR-REPAIRMAN HELPER may advance to 8533-122 REPAIRMAN, ELECTRIC MOTOR. Similarly, 8533-204 INSTALLER, DOMESTIC AIR-CONDITIONER may advance to 8533-162 REPAIRMAN, AIR CONDITIONER. Workers with supervisory potential may also advance to 8530-122 FOREMAN, ELECTRICAL EQUIPMENT INSTALLATION AND REPAIR. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Additionally, those who acquire the necessary qualifications may advance to 2165-126 ELECTRICAL-ENGINEERING TECHNOLOGIST or 2791-126 VOCATIONAL TEACHER, TECHNICAL SUBJECTS.

Transfer

Because of similarity in basic skills, only limited additional training may be required for transfer between several occupations within the individual clusters; for example, 8533-110 ELECTRICAL REPAIRMAN may transfer to 8533-122 REPAIRMAN, ELECTRIC MOTOR. Experienced workers may also transfer to occupations concerned with inspecting or testing of electrical equipment, such as 8536-118 TESTER, MOTORS AND CONTROLS and 8536-178 INSPECTOR, MOTOR AND GENERATOR. Those who have the necessary qualifications may also transfer to 2165-226 ELECTRICAL-ENGINEERING TECHNICIAN, and 8733-130 ELECTRIC METERMAN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social activities, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally,

for Cluster A:

- activities leading to satisfaction from tangible results;

for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria such as determining voltage, current and resistance using test meters;
- a variety of duties often characterized by frequent change.

B

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems;
- the precise attainment of set limits, tolerances or standards.

ELECTRONIC EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with fabricating and assembling electronic parts and equipment such as capacitors, television picture tubes and radio receivers. Worker functions include: setting up, operating or tending equipment such as electron tube coating and exhausting machines, filament-winding machines and sealing machines to process or fabricate products; manipulating hand tools and power tools to assemble electronic equipment; comparing finished products or testing equipment to specified standards to detect defects; compiling information from specifications or work orders and analyzing information in order to set up and repair production machines. Work activities include: installing gears, cams and cutters in production machines; moving controls to start, stop and regulate equipment; bolting, screwing, riveting, soldering or otherwise fastening parts together to assemble products, verifying dimensions or alignment of parts using precision measuring instruments; mounting speakers, switches, chassis and other electronic components in cabinets; checking circuits; testing assembled equipment; and replacing defective components.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8534-110	SET-UP MAN, CATHODE-RAY-TUBE PROCESSING (electronic equip.)	4	6	8534-114	SET-UP MAN, EXHAUST EQUIPMENT (electronic equip.)	4	6
				8534-126	ADJUSTER, FILAMENT-WINDING MACHINE (mech. equip., n.e.c.)	3	4

B

		GED	SVP			GED	SVP
8534-118	ALIGNER, RADIO AND TELEVISION RECEIVER (electronic equip.)	3	5	8534-134	ASSEMBLER, ELECTRONIC ORGAN (electronic equip.)	3	4
8534-122	ASSEMBLER, ELECTRONIC EQUIPMENT (electronic equip.)	3	5	8534-138	CRYSTAL-DICING-SAW OPERATOR (electronic equip.)	3	3
8534-130	CARBON-RESISTOR-PROCESSING-EQUIPMENT OPERATOR (electronic equip.)	3	4	8534-142	AGER, ELECTRON TUBE (electronic equip.)	3	3

C

		GED	SVP			GED	SVP
8534-146	ASSEMBLER, ANTENNA (electronic equip.)	2	4	8534-170	ETCHER AND PLATER, QUARTZ CRYSTAL (electronic equip.)	3	3
8534-150	ASSEMBLER, CHASSIS (electronic equip.)	3	3	8534-174	ASSEMBLER, CAPACITOR (electronic equip.)	3	3
8534-154	ASSEMBLER, CRYSTAL-UNIT (electronic equip.)	3	3	8534-178	PLATER, VACUUM-EVAPORATION PROCESS (electronic equip.)	3	3
8534-158	CHASSIS INSTALLER (electronic equip.)	3	3	8534-182	ASSEMBLER, PRINTED CIRCUIT (electronic equip.)	2	3
8534-162	CONVEYOR-LINE WORKER, PICTURE-TUBE ASSEMBLY (electronic equip.)	3	3	8534-186	ASSEMBLER, RECORD CHANGER (electronic equip.)	2	3
8534-166	CRYSTAL CALIBRATOR (electronic equip.)	3	3	8534-190	ASSEMBLER, SPEAKER (electronic equip.)	2	3
				8534-194	ASSEMBLER, ELECTRON TUBE (electronic equip.)	2	3

		GED	SVP			GED	SVP
8534-198	SEALING-MACHINE TENDER (electronic equip.)	2	3	8534-234	STEM BEADER, ELECTRON TUBE (electronic equip.)	2	2
8534-202	EXHAUST-AND-SEALING- MACHINE TENDER (electronic equip.)	2	2	8534-238	ASSEMBLER, TAPE CARTRIDGE AND CASSETTE (electronic equip.)	2	2
8534-206	ASSEMBLER, COLOUR-PICTURE- TUBE (electronic equip.)	2	2	8534-242	COLOUR CODER, COMPONENT (electronic equip.)	2	2
8534-210	ASSEMBLER, FILTER (electronic equip.)	2	2	8534-246	COMPONENT-INSERTING- MACHINE TENDER (electronic equip.)	2	2
8534-214	ASSEMBLER, PICTURE-TUBE GUN (electronic equip.)	2	2	8534-250	COMPONENT-LEAD FORMER (electronic equip.)	2	2
8534-218	ASSEMBLER, POTENTIOMETER (electronic equip.)	2	2	8534-254	DIP-SOLDERING-MACHINE TENDER (electronic equip.)	2	2
8534-222	ASSEMBLER, SEMICONDUCTOR (electronic equip.)	2	2	8534-258	RIM BANDER, TELEVISION- PICTURE TUBE (electronic equip.)	2	2
8534-226	ETCHER, PRINTED-CIRCUIT BOARD (electronic equip.)	2	2	8534-262	MACHINE FEEDER, CARBON- COMPOSITION RESISTORS (electronic equip.)	2	2
8534-230	LAMINATOR, TELEVISION- PICTURE-TUBE (electronic equip.)	2	2				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-M 347	I 567	4-3	6-4	91	0Y	
			4	<u>3</u>						4	5							
B	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	I 47	I	3	5-3	91	0Y	
				4			<u>4</u>	<u>4</u>			4							
C	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S-M 47	I	3-2	4-2	139	23Y	
			4		<u>3</u>	4	<u>4</u>	4			5							

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand the operation of electronic component production machines and to follow set-up, repair and maintenance procedures as detailed in instruction manuals;
- spatial perception to visualize the interrelationship of parts in order to set up and regulate equipment;
- form perception to examine finished products for defects that necessitate machine adjustment;
- eye-hand-finger co-ordination and manual dexterity to skilfully use hand tools and precision measuring instruments;
- finger dexterity to dismantle machines and to handle small items such as screws and micro-switches;
- capacity to perform light to medium work, involving frequent lifting of objects weighing up to twenty pounds;
- capacity to work in stooping, kneeling or crouching positions when adjusting and repairing machines;
- visual acuity for close-up work to replace small parts, examine electron tubes to detect equipment malfunctions and use micrometers to verify product dimensions;
- colour vision to identify colour-coded items such as electrical wiring and coloured tubing;
- adaptability to conditions in which there is exposure to loud noise, fumes, and hazards such as moving mechanical parts.

B

- learning ability to understand and follow instructions furnished in

written or diagrammatic form for the assembly or operation of machines to fabricate electronic components;

- spatial perception to visualize the assembly and final product from drawings;
- form perception for such activities as observing oscilloscope wave patterns and examining products for defects;
- eye-hand-finger co-ordination and manual dexterity to assemble products or to manipulate machine controls;
- finger dexterity to fabricate wiring harnesses, or to pick up and correctly position small components;
- near visual acuity to install and examine small items;
- colour vision to recognize and connect colour-coded wires as detailed in production drawings.

C

- learning ability to understand and follow written, diagrammatic or oral work instructions to fabricate and assemble electronic equipment components;
- form perception to detect product defects;
- eye-hand-finger co-ordination and manual dexterity to assemble components and to skilfully use hand tools and soldering equipment;
- finger dexterity to bend, position and attach leads to terminals, to thread cassette tapes or to perform similar tasks rapidly and accurately;
- physical capacity to perform sedentary to medium work, involving frequent lifting of objects weighing up to twenty pounds;
- visual acuity for close-up work during assembly procedures;
- colour vision to identify colour-coded components.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten to twelve years of general education;
- six months to two years of on-the-job training and related experience.

B

- ten years of general education;
- three months to one year of on-the-job training and related experience.

C

- eight to ten years of general education;
- one week to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Advancement for workers in this chapter may be to occupations requiring higher skills within their individual cluster or with experience and some additional training for occupations in Clusters C and B to A. Advancement may also be to appropriate occupations in other chapters, for example 8536-150 INSPECTOR AND TESTER, TELEVISION RECEIVER and 8536-162 INSPECTOR, QUARTZ CRYSTAL. Workers with supervisory potential may advance to 8530-126 FOREMAN, ELECTRONIC EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to other occupations within the individual clusters or to occupations requiring similar basic skills in other chapters, for example, 8531-244 SET-UP MAN, LAMP-MAKING MACHINES; 8531-148 ASSEMBLER, PORTABLE-ELECTRICAL APPLIANCE; and 8539-154 ASSEMBLER, ELECTRICAL-WIRE GROUP.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A and B**Interests**

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

C**Interests**

- dealing with things and objects;
- routine, concrete and organized work;
- non-social work carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems;
- the precise attainment of set limits, tolerances or standards.

ELECTRONIC AND RELATED EQUIPMENT INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with installing and repairing electronic equipment such as aircraft electronic systems, sound recording and audio-visual equipment, radio and television broadcasting equipment and related communications or other electronic apparatus. Worker functions include: analyzing data from job specifications to determine installation procedures or analyzing symptoms of equipment failures to determine cause of malfunction; working to close tolerances when installing or repairing electronic equipment; manipulating hand tools, test prods, controls of meters and electronic testing devices; and comparing test results to specified standards. Work activities include: studying circuit diagrams, instruction manuals or job orders prior to installation or repair work; installing equipment such as public address systems and video and sound recorders; locating defects visually or malfunctions by use of test equipment; replacing assemblies or defective parts such as modules, transformers, resistors, diodes tubes and transistors; and calibrating equipment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8535-110	INSTALLER, AIRCRAFT-ELECTRONIC-EQUIPMENT (electronic equip.)	4	7	8535-130	INSTALLER AND REPAIRER, PUBLIC ADDRESS SYSTEM (electronic equip.)	4	6
8535-114	REPAIRMAN, ELECTRONIC-EQUIPMENT (electronic equip.)	4	7	8535-134	REPAIRMAN, NUCLEONIC-CONTROLLER (electronic equip.)	4	6
8535-118	INSTALLER AND REPAIRER, AUDIO-VISUAL EQUIPMENT (electronic equip.)	4	6	8535-138	REPAIRMAN, AUTOMATED-PROCESSING EQUIPMENT (electronic equip.)	4	6
8535-122	REPAIRMAN, RADIO-COMMUNICATIONS EQUIPMENT (electronic equip.)	4	6	8535-142	HEARING-AID REPAIRMAN (electronic equip.)	3	6
8535-126	REPAIRMAN, TELEVISION-STUDIO EQUIPMENT (electronic equip.)	4	6	8535-146	PRODUCTION REPAIRMAN (electronic equip.)	3	6

B

		GED	SVP			GED	SVP
8535-150	ANTENNA RIGGER (telecom.)	3	5	8535-158	CALIBRATOR, WIRE-WOUND RESISTORS (electronic equip.)	2	2
8535-154	RADIO-COMMUNICATIONS-EQUIPMENT-REPAIRMAN HELPER (electronic equip.)	3	3				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-M 467	I 6	4-3	7-6	910	0Y	
			4	<u>3</u>														
B	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	S-M 47	I-B 6	3-2	5-2	913	0Y2	
	4				4					4								

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to acquire and apply a knowledge of electrical and electronic theory, to understand and follow technical instructions and reasoning ability to diagnose equipment malfunctions;
- numerical ability to perform arithmetic computations accurately when planning installation layouts or when calibrating equipment;
- spatial perception to visualize the relationship of parts and assemblies or installation layouts from drawings or circuit diagrams;
- form perception to detect visible defects such as damaged components, loose or broken wires and poor connections;
- eye-hand-finger co-ordination and manual dexterity to handle tools, soldering equipment and test meters;
- finger dexterity to handle and fit small items such as machine screws, wires, nuts, washers and miniature components, often into awkward or confined spaces;
- physical capacity to perform light to medium work, involving frequent lifting of objects weighing up to twenty pounds;
- good hearing to recognize satisfactory performances or faults such as hum and distortion in audio amplifiers and receivers;
- near visual acuity to see printed identification data on small items such as capacitors and transistors;

- colour vision to identify colour-coded items such as resistors and electrical wire;
- adaptability to work on equipment while exposed to possible injury from high voltages and radio-frequency power.

B

- learning ability to understand and apply instructions furnished in written or diagrammatic form;
- spatial perception to visualize correct parts-relationships from drawings;
- form perception to detect structural defects in parts and equipment;
- eye-hand-finger co-ordination and manual dexterity to skilfully use hand tools, power tools and soldering equipment;
- finger dexterity to pick up and position small items often in awkward spaces;
- physical capacity for sedentary to medium work, involving frequent lifting of objects weighing up to twenty pounds;
- near visual acuity to identify small items by their type or part number;
- colour vision to identify colour-coded items such as resistors and capacitors;
- adaptability to work on equipment while exposed to possible injury from high voltages or the risk of falls from ladders and antenna towers.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- twelve to thirteen years of general education;
- a two to three-year course in electronics at a technical institute or community college, and on-the-job training for a sufficient period to become acquainted with applicable specialization requirements; or

- two to four years of on-the-job training and courses at a vocational school, depending on the complexity of the occupation.

B

- eight to ten years of general education;
- one month to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience, and in some cases additional training, workers in this chapter may advance to higher skilled occupations within their individual cluster, or from Cluster B to A. Those who acquire the necessary qualifications may advance to 2165-130 ELECTRONIC-ENGINEERING TECHNOLOGIST or to 2791-122 VOCATIONAL TEACHER, TECHNOLOGICAL SUBJECTS. Experienced workers with supervisory ability may advance to 8530-130 FOREMAN, ELECTRONIC EQUIPMENT INSTALLATION AND REPAIR. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

With limited additional training, workers in these clusters may transfer to other occupations requiring similar skills within their cluster. Experienced workers may also find opportunities for transfer to occupations concerned with inspecting and testing of electronic equipment, such as 8536-122 TESTER, SYSTEMS and 8536-134 INSPECTOR AND TESTER, AIRCRAFT-ELECTRONIC EQUIPMENT. Other possibilities for transfer may be to 2165-230 ELECTRONIC-ENGINEERING TECHNICIAN and 8537-114 RADIO SERVICEMAN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally,

for Cluster A:

- work leading to satisfaction from tangible results.

for Cluster B:

- routine, concrete and organized work.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as locating equipment malfunctions using voltmeter or checking installations against drawings and specifications;
- the precise attainment of set limits, tolerances or standards.

Additionally,

for Cluster B:

- repetitive or short cycle operations carried out according to set procedures or sequences.

INSPECTING AND TESTING OCCUPATIONS: FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING, ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the fabrication, assembly, installation and repair of electrical, electronic and related equipment. Worker functions include: working to close tolerances when testing or inspecting parts or equipment; compiling data from drawings and work orders to determine applicable standards and procedures; comparing the electrical, electronic or physical characteristics of articles to specifications; analyzing inspection and test results; manipulating measuring devices and controls of test equipment; and handling equipment or parts undergoing examination. Work activities include: preparing test and inspection facilities for use; disassembling rejected items to determine cause of failure; correcting minor defects found during inspection; making recommendations regarding rework of rejected items; and reporting test equipment malfunctions.

LIST OF OCCUPATIONAL TITLES

		A					
		GED	SVP			GED	SVP
8536-110	TESTER, CONTROL-PANEL (electric. equip.; electronic equip.)	4	8	8536-158	INSPECTOR AND TESTER, HOME- GARDENING AND SNOW- REMOVAL UNITS (electric. equip.)	3	5
8536-114	ELECTRICAL INSPECTOR, LOCOMOTIVE (electric. equip.)	4	7	8536-162	INSPECTOR, QUARTZ CRYSTAL (electronic equip.)	3	5
8536-118	TESTER, MOTORS AND CONTROLS (electric. equip.)	4	7	8536-166	INSPECTOR, CARBON PRODUCTS (electric. equip.)	3	5
8536-122	TESTER, SYSTEMS (electronic equip.)	4	7	8536-170	INSPECTOR, COMPONENTS (electronic equip.)	3	5
8536-126	TESTER, TRANSFORMER (electric. equip.; elec. power)	4	7	8536-174	INSPECTOR, HOUSEHOLD APPLIANCE (electric. equip.)	3	5
8536-130	INSPECTOR AND TESTER, AIRCRAFT-ELECTRICAL EQUIPMENT (electric. equip.)	4	7	8536-178	INSPECTOR, MOTOR AND GENERATOR (electric. equip.)	3	5
8536-134	INSPECTOR AND TESTER, AIRCRAFT-ELECTRONIC EQUIPMENT (electronic equip.)	4	7	8536-182	INSPECTOR, REFRIGERATION UNIT (electric. equip.; mech. equip., n.e.c.)	3	5
8536-138	TESTER, LEAD-ACID STORAGE BATTERY (electric. equip.)	4	7	8536-186	TESTER, AIR-CONDITIONING- UNIT (electric. equip.; mech. equip., n.e.c.)	3	5
8536-142	INSPECTOR, HEARING AID (electronic equip.)	4	6	8536-190	TESTER, LIGHT BULB (electric. equip.)	3	5
8536-146	PROCESS INSPECTOR AND TESTER (electric. equip.)	4	6	8536-194	TESTER, ELECTRICAL CONTACTS (electric equip.)	3	5
8536-150	INSPECTOR AND TESTER, TELEVISION RECEIVER (electronic equip.)	4	6				
8536-154	INSPECTOR AND TESTER, ELECTRON TUBE (electronic equip.)	3	6				
		B					
		GED	SVP			GED	SVP
8536-198	INSPECTOR, ELECTRICAL CONTROLS (electric. equip.)	3	4	8536-206	INSPECTOR, ELECTRON-TUBE- STEM-ASSEMBLIES (electronic equip.)	3	4
8536-202	INSPECTOR, ELECTRONIC UNIT (electronic equip.)	3	4	8536-210	TESTER, DRY-CELL BATTERY (electric. equip.)	3	4

CHAPTER 8536

		GED	SVP			GED	SVP
8536-214	TESTER, PICTURE TUBE (electronic equip.)	3	4	8536-242	HELPER, MOTOR TESTING (electric. equip.)	3	3
8536-218	BATTERY-CHARGER TESTER, HEAVY DUTY (electric. equip.)	3	3	8536-246	INSPECTOR AND TESTER, RECORD PLAYER (electronic equip.)	3	3
8536-222	INSPECTOR, AUTOMOTIVE- WIRING-HARNESS (electric. equip.)	3	3	8536-250	INSPECTOR, LEAD-ACID BATTERY PARTS (electric. equip.)	3	3
8536-226	TESTER, ELECTRONIC COMPONENTS (electronic equip.)	3	3	8536-254	INSPECTOR, PRINTED-CIRCUIT BOARD (electronic equip.)	3	3
8536-230	TESTER, QUARTZ-CRYSTAL UNIT (electronic equip.)	3	3	8536-258	INSPECTOR, SCREEN AND APERTURE-MASK ASSEMBLY (electronic equip.)	3	3
8536-234	TESTER, TEMPERATURE- ACTUATED CONTROLS (electric. equip.)	3	3	8536-262	TESTER, ELECTRICAL-WIRE INSULATION (wire prod.)	2	4
8536-238	INSPECTOR, LAMP PARTS (electric. equip.)	3	3	8536-266	INSPECTOR, ELECTRIC-CLOCK COMPONENTS (electric. equip.)	3	3

C

		GED	SVP			GED	SVP
8536-270	INSPECTOR, TAPE CARTRIDGE AND CASSETTE (electronic equip.)	2	3	8536-286	INSPECTOR, BATTERY PLATES (electric. equip.)	2	2
8536-274	INSPECTOR AND TESTER, BATTERY CASE (electric. equip.)	2	3	8536-290	INSPECTOR AND TESTER, LAMPS (electric. equip.)	2	2
8536-278	PRODUCTION TESTER, LEAD- ACID BATTERY (electric. equip.)	2	3	8536-294	INSPECTOR, DRY BATTERY (electric. equip.)	2	2
8536-282	TESTER, ELECTRICAL CONTINUITY (electric. equip.)	2	3	8536-298	INSPECTOR, SMALL- ELECTRICAL-APPLIANCES (electric. equip.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	3	3	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S-M 47	I 6	4-3	8-5	91	0Y
				4	<u>2</u>			4			5						
B	4	4	4	4	<u>3</u>	4	<u>4</u>	<u>4</u>	4	5	4	S-L 47	I	3-2	4-3	193	0Y2
	3	3						<u>3</u>	<u>3</u>		5						
C	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	L-M 47	I	2	3-2	139	2Y3
					<u>3</u>												

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand the operation of electrical and electronic equipment such as motors and controls, domestic appliances and radio, television and communications equipment, to apply the appropriate quality-control methods, to understand the significance of test results and to determine the acceptability of products according to specifications;
- form perception to observe factors that indicate lack of quality such as poorly plated hardware or solder splashes;
- eye-hand-finger co-ordination to accurately position test leads and adjust oscilloscope controls, meters or other test equipment;
- finger dexterity to handle small parts and delicate items such as hearing-aid subassemblies, lamp filaments and quartz crystal wafers;

- manual dexterity to use micrometers, calipers or other hand tools and for activities such as placing equipment in holding jigs;
- capacity to perform sedentary to medium work involving frequent lifting of objects weighing up to twenty pounds;
- visual acuity for close-up work such as inspecting printed circuit board wiring;
- colour vision to identify colour-coded wires and components;
- adaptability to working with live circuits where there is danger of electric shock and where safe working practices are often specified.

B

- learning ability to understand inspection techniques and follow routine test procedures as specified for items such as printed-circuit boards, battery chargers, thermostats and wet and dry batteries;
- form perception to detect unsatisfactory conditions such as soldering defects, loose hardware and marred finishes;

- eye-hand-finger co-ordination to accurately measure and verify dimensions of parts, bend wires to correct their routing in equipment, make electrical connections and set or adjust controls of test devices;
- finger dexterity to pick up small parts and to inspect delicate items such as electron tube stem assemblies and lamp filaments;
- manual dexterity to grasp, turn and hold or place articles in optimum position for examination and to use hand tools to make minor adjustments;
- near visual acuity for inspection of small parts such as lamp filaments or record player mechanisms;
- colour vision to identify coded wire leads in wiring harnesses.

C

- learning ability to understand and apply simple inspection procedures for repetitive quality-control work such as examining and

testing small electrical appliances, light bulbs and their component parts;

- form perception to detect imperfections in finish of articles and to ensure that products are correctly assembled and complete;
- eye-hand-finger co-ordination to position electrical test probes when making continuity or voltage measurements and to pick off defective items from moving conveyors;
- manual dexterity to use templates to check dimensions of equipment parts or to remove smudges from electrical appliances;
- capacity to perform light to medium work involving frequent lifting of objects weighing up to twenty pounds;
- visual acuity for inspection of small electrical or appliance parts;
- colour vision to identify colour-coded electrical leads.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- one to four years of on-the-job training, or a company sponsored apprenticeship for similar periods, depending on the complexity of the occupation.

B

- eight to ten years of general education;
- one to six months of on-the-job training.

C

- eight to ten years of general education;
- one week to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Workers in this chapter may advance to other occupations requiring higher skills within their individual cluster or, with experience and additional training, from Cluster C to B and to A. Those who acquire the necessary qualifications may advance to 2165-226 ELECTRICAL-ENGINEERING TECHNICIAN; or to 2165-230 ELECTRONIC-ENGINEERING TECHNICIAN. Workers with supervisory potential may advance to appropriate occupations in Volume I, Unit Group 8530 FOREMEN: FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS, ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to occupations requiring similar skills within their individual cluster or from Cluster C to B. Experienced workers may also transfer to appropriate occupations in other chapters, for example, 8536-130 INSPECTOR AND TESTER, AIRCRAFT-ELECTRONIC EQUIPMENT, may transfer to 8535-110 INSTALLER, AIRCRAFT-ELECTRONIC-EQUIPMENT. Similarly, 8536-270 INSPECTOR, TAPE CARTRIDGE AND CASSETTE may transfer to 9555-154 TAPE DUPLICATOR; and 8536-202 INSPECTOR, ELECTRONIC UNIT may transfer to 8535-146 PRODUCTION REPAIRMAN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and disposition for work involving the following:

Interests

- non social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for workers in Clusters B and C:

- routine, concrete and organized work.

Temperaments**A and B**

- the evaluation of information against measurable or verifiable criteria, such as verifying test results and dimensions of equipment against manufacturing specifications;
- the precise attainment of set limits, tolerances or standards.

Additionally, for Cluster B:

- repetitive or short cycle operations carried out according to set procedures or sequences.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

RADIO AND TELEVISION REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with repairing radio and television receivers, tape recorders, phonographs and related equipment. Worker functions include: analyzing data obtained by listening, examination or testing to identify nature of malfunctions and locate faulty parts; working precisely when performing tests and fitting replacement parts; and manipulating hand tools, test prods and controls of meters, oscilloscopes, signal generators and other testing devices. Work activities include: querying customers regarding malfunctions; listening to sound or observing television picture to detect faults; testing electron tubes, resistors and other components; and adjusting or replacing defective items.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8537-110	TELEVISION REPAIR SERVICEMAN (electronic equip.)	4	7	8537-114	RADIO SERVICEMAN (electronic equip.)	4	6

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	3	3	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>3</u>	L-M 3467	I 6	4	7-6	901	Y0
									4							

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and some additional training, workers in this cluster may advance to 2165-230 ELECTRONIC-ENGINEERING TECHNICIAN. Those with supervisory potential may advance to 8530-134 FOREMAN, RADIO AND TELEVISION REPAIR. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Experienced workers who acquire knowledge of business practices may become self-employed by operating their own sales and service facilities.

Transfer

Experienced workers in this chapter may, with limited additional training, transfer to appropriate occupations in Chapters 8535, ELECTRONIC AND RELATED EQUIPMENT INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.; and 8536, INSPECTING AND TESTING OCCUPATIONS: FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING, ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities which are basically non-social in nature and are carried on in relation to machines and techniques;
- activities leading to satisfaction from tangible results, such as repairing an inoperative radio or television set;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as comparing voltage measurements with specifications;
- the precise attainment of set limits, tolerances or standards.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in the manufacture, installation and repair of electrical, electronic and related equipment. Worker functions include: feeding parts and partially finished items into production machines, and offbearing products; and lifting, moving or carrying materials or products between work areas. Work activities include: filling trays with parts for further processing; placing objects on conveyors; attaching wire leads to terminals; fitting clamps; segregating defective parts; and cleaning work areas.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8538-110	BATTERY-ACID DUMPER (electric. equip.)	1	2	8538-118	TAKE-OFF-MAN, BATTERY PLATES (electric. equip.)	1	2
8538-114	DRY-CELL-ASSEMBLY-MACHINE FEEDER (electric. equip.)	1	2	8538-122	RESISTOR-LEAD-WIRE ASSEMBLER (electronic equip.)	1	2

QUALIFICATIONS PROFILE

Aptitudes													PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C								
4	5	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5			L-M 47	I 467	1	2	31	23
		4				<u>3</u>				4								23Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply simple instructions and work procedures;
- eye-hand-finger co-ordination to correctly position parts, such as clamps to resistor cores and to insert rivets and actuate trigger of rivet gun;
- manual dexterity to feed and offbear products from production machines and handle parts at a rate that meets acceptable output levels;

- strength to perform light to medium work requiring frequent lifting of objects weighing up to twenty pounds;
- visual acuity to safely feed material, position or insert parts into production machines;
- adaptability to a variety of physical hazards, for example, exposure to moisture, fumes and for battery workers toxic dusts, or proximity to moving equipment by those who feed or offbear materials from machines.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight years of general education;

- on-the-job training ranging from a short demonstration for some workers and up to one month for others.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs and advancement is normally to higher skilled occupations in Minor Group 853, FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS: ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT; for example, 8531-444 ASSEMBLER, TRANSFORMER-STATIC-PLATE; 8533-230 ELECTRIC-MOTOR-REPAIRMAN HELPER; 8534-218 ASSEMBLER, POTENTIOMETER; 8535-158 CALIBRATOR, WIRE-WOUND RESISTORS; and 8539-198 WIRE-STRIPPING-AND-CUTTING-MACHINE TENDER, AUTOMATIC.

Transfer

Transfer possibilities for workers in this chapter may be to other occupations in labouring and elemental work concerned with fabricating, assembling or repairing products, for example, 8528-110 TINWARE WORKER and 8598-114 LABOURER GENERAL, ASSEMBLY LINE.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

Additionally, for 8538-122 RESISTOR-LEAD-WIRE ASSEMBLER:

- the precise attainment of set limits, tolerance or standards.

OTHER REQUIREMENTS

Workers who are employed in the manufacture of lead-acid storage batteries and who handle or are exposed to lead or lead compounds, are required to have regular medical examinations in some provinces. Strict procedures are specified if there is evidence of lead poisoning.

GROUP 8539

FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS: ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT, N.E.C.

This group includes occupations, not elsewhere classified, concerned with fabricating, assembling, installing and repairing a variety of electrical and electronic equipment and components.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
8539-110	PRECISION ASSEMBLER (electric. equip.; electronic equip.)	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>2</u>	<u>2</u>	5	3	L 47	I	4	7	190	0Y
8539-114	TEST-EQUIPMENT REPAIRMAN, OIL EXPLORATION (electric. equip.; electronic equip.)	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	5	3	L 457	I	4	6	190	0Y
8539-118	PHOTOELECTRIC-SORTING-MACHINE REPAIRMAN (electronic equip.)	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	5	3	L 47	I 6	3	6	190	0Y
8539-122	ASSEMBLER, DIELECTRIC AND INDUCTION HEATERS (electric. equip.; electronic equip.)	<u>3</u>	3	3	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	5	3	M 347	I	3	6	190	0Y
8539-126	ASSEMBLY-MACHINE SET-UP MAN (electric. equip.; electronic equip.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 3457	I	3	5	19	0Y
8539-130	ELECTRIC-TOY REPAIRMAN (electric. equip.)	<u>3</u>	4	4	<u>4</u>	<u>2</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	5	4	L 457	I	3	5	19	0Y
8539-134	ELECTROLYTIC-CELL REPAIRMAN (chem., n.e.c.)	3	4	4	3	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 34	I 67	3	5	19	0Y
8539-138	IMPREGNATOR AND DRIER (electric. equip.; electronic equip.)	3	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	4	5	M 47	I 367	3	5	913	2Y
8539-142	CRYSTAL GROWER (electronic equip.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	3	<u>3</u>	5	5	L 47	I	3	4	193	2Y
8539-146	DIFFUSION-FURNACE OPERATOR (electronic equip.)	3	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	S 47	I	3	4	193	2Y0
8539-150	ANTENNA INSTALLER (electronic equip.)	3	4	4	4	<u>3</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	<u>3</u>	4	M 2347	B 6	3	4	193	2Y
8539-154	ASSEMBLER, ELECTRICAL-WIRE GROUP (air & space-craft; electric. equip.; electronic equip.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	3	L 47	I	3	4	193	2Y
8539-158	AUTOMATIC-WIRE-WRAPPING MACHINE TENDER (electric. equip.; electronic equip.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I	3	4	913	2Y
8539-162	PHOTORESIST PRINTER (electronic equip.)	3	4	4	4	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	S 47	I	3	3	19	0Y
8539-166	GAUGER, SEMICONDUCTOR MATERIAL (electronic equip.)	4	4	4	4	<u>3</u>	4	<u>4</u>	<u>3</u>	<u>4</u>	5	5	S 47	I	3	3	13	2Y
8539-170	ELECTRODE INSTALLER (non- metal. min. prod., n.e.c.)	4	4	4	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	4	5	VH 4	I 57	3	3	13	2Y
8539-174	COIL-WINDING-MACHINE TENDER (electric. equip.; electronic equip.)	4	4	4	4	<u>3</u>	5	<u>4</u>	<u>3</u>	<u>4</u>	5	5	L 47	I	3	3	319	23Y
8539-178	ELECTROLYTIC-ANODE CHANGER (non- ferrous metal)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	H 34	I 3567	2	3	31	23Y
8539-182	CELL-MAINTENANCE MAN (non- ferrous metal)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	H 34	I 67	2	3	31	23Y
8539-186	COIL WINDER, MANUAL FEED (electric. equip.; electronic equip.)	4	4	5	4	4	5	<u>3</u>	4	<u>3</u>	5	5	L 47	I	2	3	139	23Y
8539-190	ENCAPSULATOR (electric. equip.; electronic equip.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I 36	2	3	13	23Y
8539-194	TRANSFORMER ASSEMBLER (electric. equip.; electronic equip.)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	<u>3</u>	<u>3</u>	5	3	L 47	I	2	3	13	23Y
8539-198	WIRE-STRIPPING-AND-CUTTING MACHINE TENDER, AUTOMATIC (electric. equip.; electronic equip.)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I 5	2	3	319	23Y

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8539-202	CODING-MACHINE TENDER (electric. equip.; electronic equip.; wire prod.)	4	4	5	4	<u>4</u>	4	<u>4</u>	3	<u>3</u>	5	5	L 4	I	2	2	319	23Y
8539-206	CRIMPING-MACHINE TENDER, CONNECTORS (electric. equip.; electronic equip.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I	2	2	319	23Y
8539-210	FILLING-MACHINE TENDER (electric. equip.; electronic equip.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	319	23Y
8539-214	COIL FINISHER (electric. equip.; electronic equip.)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	S 47	I	2	2	31	23Y
8539-218	LAMP-FILAMENT PROCESSER (electric. equip.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I 67	2	2	31	23
8539-222	SALVAGE MAN, STORAGE BATTERY (electric. equip.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	H 4	I 4	2	2	31	23
8539-226	WIREWORKER (electric. equip.; electronic equip.)	4	4	5	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	S 47	I	2	2	31	23Y

CABINET AND WOOD FURNITURE MAKERS

WORK PERFORMED

This chapter includes occupations concerned with fabricating, assembling and repairing cabinets, doors and frames for doors and windows, and other wooden household, store and office furniture. Worker functions include: analyzing data from drawings and specifications to determine type of stock and dimensions or machining required; working precisely to lay out parts on wood stock and mark cutting lines for machining; setting up, operating and tending a variety of common and special woodworking machines; manipulating hand and power tools to fit, join and assemble parts; and comparing finished articles to ensure conformance to specifications. Work activities include: repairing surface defects on wooden articles; simulating antique finish on furniture; weaving chair seats from cane, rattan or reed; and fitting and installing latches, hinges, handles and other hardware.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8541-110 CABINETMAKER (furn.)

4 7

B

GED SVP

8541-114 LAY-OUT MAN

4 7

(furn.; woodworking)

C

GED SVP

8541-122 DOWEL-INSERTING-MACHINE
SET-UP OPERATOR
(woodworking)

3 5

D

GED SVP

8541-118 ASSEMBLER, FRAME AND
MIRROR (furn.)

3 6

8541-126 REPAIRMAN, ASSEMBLED WOOD
PRODUCTS (furn. woodworking)

3 4

8541-130 ANTIQUER (furn.)

3 4

8541-134 WEAVER, CHAIR SEAT (furn.)

3 4

8541-138 GLUE-BONDING-MACHINE
TENDER (furn.; woodworking)

3 4

8541-142 CASE FITTER (furn.)

3 3

8541-146 EDGE BANDER (furn.; woodworking)

3 3

8541-150 FURNITURE ASSEMBLER (furn.)

2 4

8541-154 ASSEMBLER, SASH AND DOOR
(woodworking)

2 3

8541-156 CABINET ASSEMBLER (furn.)

2 3

8541-158 FURNITURE CANER (furn.)

2 3

8541-162 LAMINATOR, HAND (furn.)

2 3

8541-166 PATCHER, DOOR (woodworking)

2 3

8541-170 PICTURE-FRAME ASSEMBLER
(furn.)

2 3

8541-174 HYDRAULIC-PRESS TENDER
(furn.)

2 3

8541-178 LAMINATING-PRESS TENDER
(furn.; woodworking)

2 3

8541-182 CHAIR LEVELER (furn.)

2 3

8541-190 HARDWARE INSTALLER
(furn.; woodworking)

2 2

8541-194 BANDING-MACHINE TENDER
(furn.)

2 2

8541-198 CLAMPING-MACHINE TENDER
(furn.; woodworking)

2 2

8541-202 DOWELLING-MACHINE TENDER
(woodworking)

2 2

8541-206 LAG-BOLT-MACHINE TENDER
(furn.)

2 2

8541-210 ASSEMBLER, WOODENWARE
(furn.; woodworking)

2 2

8541-214 SANDER, HAND (furn.)

2 2

8541-218 DOOR LAY-UP MAN (woodworking)

2 2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>2</u>	5	4	M 47	I 57	4	7	190	Y041	
B	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>4</u>	5	4	L 47	I 5	4	7	19	Y0	
C	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 5	3	5	91	Y0	
D	4	4	5	<u>4</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L-M 347	I 57	3-2	4-2	193	2Y3	
	3					5	<u>3</u>		<u>4</u>	4								

APTITUDES AND CAPACITIES

Workers in this chapter require:

A and B

- learning ability to identify different types of wood, understand their characteristics and apply the techniques and procedures involved in the construction, assembly and repair of wooden furniture, fixtures and equipment;
- spatial perception to visualize, from drawings or other specifications, the required shapes and arrangement of parts used to form the complete unit;
- form perception to observe pertinent detail when matching wood stock and examining products for surface defects;
- eye-hand co-ordination to skilfully use hand and power tools and woodworking machines;
- finger dexterity to manipulate objects such as measuring and marking devices, machine controls, fasteners and hardware;
- manual dexterity to mark, cut, assemble and secure wooden components and to install hardware on finished products;
- capacity to perform light to medium work;
- near visual acuity to accurately lay out and mark wood stock, to match colour and grain and to precisely machine wood to specified dimensions and shapes;
- adaptability to working indoors while exposed to constant noise from woodworking machines;

- adaptability to working conditions subject to possible hazards from woodworking machines and wood-dust in the atmosphere.

C and D

- learning ability to understand and apply routine instructions and procedures for assembling and repairing wooden furniture and articles;
- spatial perception to visualize how furniture components fit together to form the complete product;
- form perception to observe surface defects and ensure joints are straight and clean;
- eye-hand co-ordination and manual dexterity to skilfully work with hand and power tools and woodworking machines, and to fit, join and assemble wooden articles by hand;
- finger dexterity to manipulate objects such as nails, thumbtacks, clamps and hardware;
- strength to perform light to medium work;
- near visual acuity to fit, trim and assemble wooden components;
- colour vision to match colour and grain of wood;
- adaptability to working in proximity to noise from woodworking machinery and hammering;
- adaptability to working in conditions subject to hazards from sharp tools, operating machinery and wood dust.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A and B

- nine to ten years of general education;
- a three to four-year apprenticeship program or similar form of on-the-job training; or

- a two to three-year program at a vocational school and on-the-job training.

C and D

- six to nine years of general education;
- one month to one year or more of on-the-job training and related experience, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement****A and B**

Experienced Cabinetmakers and Lay-Out Men with supervisory potential may advance to 8540-110 FOREMAN, CABINET AND WOOD FURNITURE MAKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Those who acquire a knowledge of business practices may become self-employed.

C and D

Workers in Cluster D may advance to occupations requiring higher skills within that cluster. Experienced workers in C and D may, with additional training, advance to Cabinetmakers and Lay-Out Men. Those with supervisory potential may advance to appropriate occupations in Volume I, Unit Group 8540, FOREMEN: FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Cabinetmakers and Lay-Out Men may transfer to occupations requiring similar skills in other chapters, for example, 8351-114 MODEL MAKER, WOOD, 8781-110 CARPENTER and 8395-110 FURNITURE REPRODUCER. Experienced Lay-Out Men may, with limited additional training, also transfer to 2163-122 DETAIL DRAUGHTSMAN. Other workers in this chapter may transfer to occupations requiring similar skills within the chapter, or to appropriate occupations in Chapter 8549, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS, N.E.C., or in Minor Group 835, WOOD MACHINING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Additionally,

for Cabinetmakers:

- activities leading to satisfaction from tangible results.

For workers in Cluster D:

- routine, concrete and organized work.

Temperaments

Cabinetmakers, Lay-Out Men and workers in Cluster C:

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

Additionally, for Cabinetmakers:

- the direction, control and planning of an entire activity or the activities of others;
- a variety of duties often characterized by frequent change.

Workers in Cluster D:

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING AND REPAIRING, WOOD PRODUCTS

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in the fabrication, assembly and repair of wooden products. The primary worker function is: handling parts, materials, hand tools and work aids to perform routine tasks. Work activities include: ensuring tightness of barrels; assembling wooden boxes, crates and collapsible hogsheads, using nails and metal strips; rubbing wood filler into furniture and furniture parts; hammering steel bands into ends of timber and railroad ties to prevent checking while seasoning; and removing clamps from stacks of veneered products.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8548-110	COOPERAGE LABOURER (woodworking)	1	2	8548-126	CLAMP REMOVER (furn.)	1	2
8548-114	LABOURER, BOX FACTORY (woodworking)	1	2	8548-130	HOGSHEAD ASSEMBLER (woodworking)	1	2
8548-118	WIPER (furn.)	1	2	8548-134	BAND NAILER (sawmill)	1	1
8548-122	ANTICHECKING-IRON MAN (woodworking)	1	2	8548-138	BARREL-STAVE LEVELER (woodworking)	1	1

QUALIFICATIONS PROFILES

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	L-H 347	I	1	2-1	31	23
	5					<u>3</u>		<u>4</u>	5							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply simple instructions and procedures related to wood product fabricating, assembling and repairing operations;
- eye-hand-finger co-ordination to use a variety of hand tools to perform simple and repetitive tasks;

- manual dexterity to insert, attach, cut, bend, remove and pile parts, materials or products;
- ability to perform duties while in a stooped position;
- capacity to perform work involving continuous reaching, handling, pushing, pulling, lifting and carrying of materials and objects weighing up to fifty pounds.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specific educational level;

- on-the-job training ranging from a short demonstration for some occupations to thirty days for others.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs, and advancement is normally to higher skilled occupations in Minor Group 854 FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS for workers who demonstrate ability, interest and initiative.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within this chapter. Transfer possibilities may also be to occupations in labouring and elemental work in other chapters such as 8598, OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with fabricating, assembling and repairing wooden products such as barrels, tanks, buckets, caskets, sporting goods, and wire and cable reels.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Barrelmaking and Cooperage Occupations</i>																		
8549-110	COOPER (woodworking)	3	4	4	<u>3</u>	<u>3</u>	5	<u>3</u>	4	<u>3</u>	5	5	M 347	I	3	6	91	Y0
8549-114	SAWYER AND ASSEMBLER, TANK BOTTOM (woodworking)	3	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5	M 3457	I 5	3	5	91	Y0
8549-118	BARREL ASSEMBLER, MACHINE (woodworking)	3	4	4	<u>3</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5	H 47	I 36	3	4	91	2Y
8549-122	TANK ASSEMBLER (woodworking)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5	H 47	I	3	4	91	2Y
8549-126	BUCKET CHUCKER (woodworking)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	L 4	I 5	2	3	931	23Y
8549-130	BUCKET-LATHE OPERATOR (woodworking)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 4	I 5	2	3	931	23Y
8549-134	BARREL CHARRER (woodworking)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 4	I 37	2	3	31	23
8549-138	HOGSHEAD REPAIRMAN (woodworking)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	H 34	I	2	3	31	23Y
8549-142	HEADING MATCHER AND ASSEMBLER (woodworking)	4	4	4	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	5	5	M 47	I 5	2	2	31	23Y
8549-146	LEAK HUNTER (woodworking)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	M 2347	I	2	2	31	23Y
8549-150	BARREL RAISER (woodworking)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	H 34	I	2	2	31	23
8549-154	HEADER, BARREL (woodworking)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I	2	2	31	23
<i>Boxmaking Occupations</i>																		
8549-174	CASKET ASSEMBLER (woodworking)	3	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I	3	6	910	0Y
8549-178	BOX-BLANK-MACHINE OPERATOR (woodworking)	3	4	4	<u>3</u>	4	5	<u>3</u>	4	<u>4</u>	5	5	L 4	I 5	3	4	91	0Y
8549-182	BOX MAKER (woodworking)	4	4	4	<u>4</u>	4	4	<u>3</u>	4	<u>3</u>	5	5	M 34	I 5	2	3	319	23Y
8549-186	STAPLING-MACHINE TENDER, BOX END (woodworking)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	4	5	L 47	I 5	2	3	319	23Y
8549-190	BOX ASSEMBLER (woodworking)	4	4	5	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	5	5	M 34	I	2	2	319	23Y
8549-194	LOOPING-MACHINE TENDER (woodworking)	4	4	5	<u>4</u>	<u>4</u>	5	<u>3</u>	4	<u>4</u>	5	5	L 47	I 56	2	2	319	23
8549-198	BOX-BLANK-MACHINE FEEDER (woodworking)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	L 34	I 5	2	2	31	23
8549-202	BOX-BLANK FORMER (woodworking)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	L 4	I 5	2	2	31	23
<i>Wood Carving, Shaping and Bending Occupations</i>																		
8549-246	WOOD CARVER (furn.; woodworking)	<u>3</u>	3	3	<u>2</u>	<u>2</u>	4	<u>2</u>	<u>3</u>	<u>2</u>	5	4	L 47	I	4	8	801	90Y
8549-250	SHAPER, HAND (furn.; woodworking)	4	4	5	<u>3</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 5	2	4	91	0Y2
<i>Nailing, Fastening and Gluing Occupations</i>																		
8549-270	NAILING-MACHINE OPERATOR (furn.; woodworking)	4	4	4	<u>4</u>	4	4	<u>3</u>	4	<u>3</u>	<u>4</u>	5	L 47	I 5	2	3	391	23Y
8549-274	SQUEEZER TENDER (woodworking)	4	4	5	4	4	4	<u>4</u>	4	<u>3</u>	5	5	L 4	I 5	2	3	391	23Y
8549-278	CORRUGATED-FASTENER DRIVER (furn.; woodworking)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	M 4	I 5	2	2	391	23Y
8549-282	GLUER, ASSEMBLY-LINE (woodworking)	4	4	5	4	4	5	<u>3</u>	4	<u>4</u>	5	5	M 47	I 5	2	2	31	23Y

GROUP 8549

Other Fabricating, Assembling and Repairing Occupations, Miscellaneous Wood Products

8549-302	JIG BUILDER (furn.; woodworking)	<u>3</u> 4 3 <u>3</u> <u>3</u> 4 <u>3</u> 4 <u>3</u> 5 5	L 347	15	4	6	91	0Y
8549-306	GOLF-CLUB-HEAD FINISHER, WOOD (sport. & toy)	3 4 4 <u>3</u> <u>3</u> 4 <u>3</u> <u>4</u> <u>3</u> 5 5	L 47	15	3	5	91	0Y
8549-310	FLASK MAKER, FOUNDRY (iron & steel; non-ferrous metal)	3 4 4 <u>3</u> <u>3</u> 4 <u>4</u> 4 <u>3</u> 5 5	M 47	16	3	4	91	0Y
8549-314	LAST REMODELER (woodworking)	3 4 4 <u>3</u> <u>3</u> 5 <u>3</u> <u>4</u> <u>3</u> 5 4	L 47	1	3	4	91	0Y2
8549-318	LACROSSE-STICK MAKER (sport. & toy)	4 4 4 <u>3</u> <u>3</u> 4 <u>3</u> <u>4</u> <u>3</u> 5 5	M 47	1	2	3	910	0Y2
8549-322	LAST REPAIRMAN (woodworking)	4 4 5 <u>4</u> 4 5 <u>4</u> 4 <u>3</u> 5 5	L 4	1	2	3	319	23Y
8549-326	WOODEN-REEL ASSEMBLER (woodworking)	4 4 4 <u>4</u> 4 5 <u>4</u> 4 <u>3</u> 5 4	H 34	17	2	2	319	23Y

N.B. Occupations 8549-222 STRINGED-INSTRUMENT MAKER (misc. prod. fab., n.e.c.) and 8549-226 STRINGED-INSTRUMENT REPAIRMAN (misc. prod. fab., n.e.c.) have been transferred, for Vol. II purposes, to Chapter 8599A, MUSICAL INSTRUMENT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, N.E.C.

PATTERNMAKING, MARKING AND CUTTING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS

WORK PERFORMED

This chapter includes occupations concerned with making patterns and laying out, marking and cutting textile, fur and leather material to make or prepare parts for assembly into garments, footwear, sails, upholstery and other products. Worker functions include: compiling data from sketches, sample articles and design specifications to determine number, shape and size of pattern parts, and type and quantity of material required; working with precision to draw sketches and full size or scaled patterns, and to mark positions of pleats, pockets or buttons and cutting, sewing, stitching and assembly lines on materials; and manipulating materials, shears and knives, or operating and tending machines to cut, trim, mark, punch or stamp textile, fur and leather parts or products. Work activities include: selecting patterns and materials to be used; forming materials over pattern or positioning materials in machine; and adjusting guides, cutting blades and other mechanisms on machines and equipment for specific operations.

LIST OF OCCUPATIONAL TITLES

A							
		GED	SVP			GED	SVP
8551-110	LAYOUT-AND-PATTERN MAN, SAIL (garment & fabric)	4	7	8551-118	PATTERNMAKER (furn.; garment & fabric)	4	6
8551-114	DESIGN-AND-PATTERN MAN, CANVAS GOODS (garment & fabric)	4	6	8551-122	PATTERNMAKER, SHOE (shoes)	4	6
				8551-126	PATTERN MODIFIER (garment & fabric)	4	6
B							
		GED	SVP			GED	SVP
8551-130	PATTERN CUTTER (garment & fabric; knit goods)	3	5	8551-158	SAIL CUTTER (garment & fabric)	2	4
				8551-162	CUTTER, HAND (any ind.)	2	3
8551-134	SLIPCOVER CUTTER (garment & fabric)	3	4	8551-166	RE-CUTTER (garment & fabric)	2	3
				8551-170	CUTTER, Mallet-AND-DIE (garment & fabric; leather goods; rubber)	2	3
8551-138	CUTTER, SHOE PARTS (shoes)	3	4				
8551-142	PATTERN MARKER (any ind.)	3	4	8551-174	LAY-OUT-TABLE GIRL (garment & fabric)	2	3
8551-146	CUTTER, PORTABLE MACHINE (garment & fabric)	3	4				
				8551-178	PERFORATOR, PATTERN (garment & fabric)	2	3
8551-154	MARKER-AND-CUTTER, UPHOLSTERY (furn.)	2	4	8551-182	RUG CLIPPER (garment & fabric)	2	3
C							
		GED	SVP			GED	SVP
8551-150	FELT CUTTER, MACHINE (explosives; garment & fabric)	3	4	8551-202	GARMENT NOTCHER (garment & fabric)	2	2
8551-184	CUTTING-MACHINE TENDER (textile)	2	3	8551-204	MARKER, SHOE PARTS (shoes)	2	2
8551-186	BIAS-CUTTING-MACHINE TENDER (knit goods; textile)	2	3	8551-206	SCALLOP CUTTER, MACHINE (garment & fabric)	2	2
8551-190	LEATHER-STRIPPING-MACHINE TENDER (leather goods; shoes)	2	3	8551-210	STRIP-CUTTING-MACHINE TENDER (textile)	2	2
8551-194	WELT-TRIMMING-MACHINE TENDER (garment & fabric)	2	3	8551-214	MARKER (garment & fabric; knit goods)	2	2
8551-198	CUFF-CUTTING-MACHINE TENDER (knit goods)	2	2				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-M 47	I	4	7-6	910	0Y9 0Y	
		4		<u>3</u>	<u>2</u>		4	4	4	4	5							
B	4	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I	3-2	5-3	193	Y0 Y2	
	3		3	<u>4</u>	<u>4</u>	5	<u>4</u>	4			5							
C	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	L-M 47	I	3-2	4-2	319	2Y 2Y3	
			5		<u>3</u>	4	<u>3</u>		<u>4</u>									

APTITUDES AND CAPACITIES

Workers in these clusters require:

A and B

- learning ability to understand and apply the principles and techniques of patternmaking, or the procedures for using patterns to mark and cut materials;
- spatial perception to visualize the completed article when designing and making patterns;
- form perception to distinguish pertinent details on design specifications or sketches and to recognize variances in materials used;
- eye-hand-finger co-ordination for such precise activities as laying out and drawing patterns or cutting material along marked lines;
- finger and manual dexterity to manipulate draughting instruments or cutting tools rapidly and skilfully when making or cutting patterns.

C

- learning ability to understand and apply procedures for using textile, fur and leather cutting machines;

- form perception to make visual comparisons of cut or trimmed materials to detect imperfections, damage or other defects;
- eye-hand-finger co-ordination to thread materials through feed mechanisms or to position and align materials in machine guides;
- manual dexterity to move the hands easily and skilfully when using hand tools to adjust or maintain machines;
- eye-hand-foot co-ordination to place material over template or against guide, to hold material in position on machine and to step on pedal to cut or notch product.

All workers in this chapter require:

- physical capacity to perform light to medium work which may involve handling, lifting or carrying rolls of materials or equipment weighing up to fifty pounds;
- near visual acuity to draw and cut out patterns precisely and to accurately read graduations on tape measures, rulers or gauges.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- one year of on-the-job training and from one to two years of related experience, preferably as a cutter.

B and C

- eight to ten years of general education;
- one to six months of on-the-job training, and related experience depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for workers in this chapter may be to occupations requiring higher skills within their individual cluster or from Cluster C to B and to A. Experienced workers may also advance to appropriate occupations in Chapter 8566, INSPECTING, GRADING AND SAMPLING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, TEXTILE, FUR AND LEATHER PRODUCTS. Those with supervisory potential may advance to 8550-130 FOREMAN, PATTERNMAKING, MARKING AND CUTTING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities for workers in Cluster A are limited, however, workers in Cluster B and C may transfer to other occupations requiring similar skills within those clusters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to processes, machines and techniques as in designing and making patterns;
- dealing with things and objects;
- work resulting in tangible, productive satisfaction.

Temperaments

- the evaluation of information against measurable or verifiable criteria, as in analyzing specifications to determine type of pattern required;
- the precise attainment of set limits, tolerances or standards.

B

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques;
- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- repetitive or short cycle operations carried out according to set procedures or sequences.

C

Interests

- routine, concrete and organized work;
- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

TAILORS AND DRESSMAKERS

WORK PERFORMED

This chapter includes occupations concerned with making, altering and repairing complete items of tailored clothing, dresses and other made-to-measure garments, and performing complex operations in the manufacturing of ready-to-wear garments. Worker functions include: analyzing data concerning customers' measurements, requirements and preferences to draw an original or modify an existing pattern; compiling information to select material, style and design of garment; working with precision to measure, cut and sew material and fit and alter clothing; operating sewing machines or sewing by hand to join parts together; and comparing material, patterns and measurements to ensure conformance with specifications on instruction, alteration or repair tag. Work activities include: measuring customers and recording measurements; marking dimensions on material and cutting off excess material; placing pattern in position to effect maximum use of material and cutting along pattern line; and fitting garments on customer.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8553-142	DRESSMAKER (garment & fabric; ret. trade)	4	8	8553-114	TAILOR, READY-TO-WEAR GARMENTS (garment & fabric; ret. trade)	4	6
8553-110	TAILOR, MADE-TO-MEASURE GARMENTS (garment & fabric; ret. trade)	4	8	8553-178	SAMPLE-GARMENT MAKER (garment & fabric; ret. trade)	3	6
8553-174	COSTUMER (broadcast., motion pic. & stage; garment & fabric)	4	7	8553-150	SEAMSTRESS, WOMEN'S GARMENT ALTERATIONS (garment & fabric; ret. trade)	3	6
8553-146	SEAMSTRESS (garment & fabric; ret. trade)	4	6	8553-118	TAILOR, MEN'S GARMENT ALTERATIONS (garment & fabric; ret. trade)	3	6

B

		GED	SVP			GED	SVP
8553-154	WOMEN'S GARMENT FITTER (garment & fabric; ret. trade)	3	5	8553-186	WARDROBE MISTRESS (broadcast., motion pic. & stage; garment & fabric)	3	4
8553-182	CORSETIERE (garment & fabric; ret. trade)	3	5	8553-190	GARMENT MARKER (garment & fabric; ret. trade)	2	2
8553-122	MEN'S GARMENT FITTER (garment & fabric; ret. trade)	3	5				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>4</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	4	4	L 47	I	4-3	8-6	190	90Y5 90Y	
B	<u>3</u>	4	<u>4</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	5	4	L 347	I	3-2	5-2	19	20Y	
	4			4				3		4	5							

APTITUDES AND CAPACITIES

Workers in these clusters require:

— learning ability to understand and apply the principles and techniques of tailoring, dressmaking and patternmaking;

- numerical ability to draw pattern, modify existing pattern or alter garment according to customers' measurements;
- spatial perception to visualize fit and drape of assembled garment from measurements, sketches and patterns, and to design garments and draft patterns;
- form perception to discern pertinent detail in style designs, patterns and material, and to do fine, exacting work requiring constant attention to detail;

- eye-hand-finger co-ordination, finger dexterity and manual dexterity to take customers' measurements, draw patterns, cut out material, pin, assemble garment using needle and thread or sewing machine, iron garment, fit and alter garment;
- near visual acuity to perform detailed work;
- colour discrimination for 8553-174 COSTUMER, to select fabric hues or colours that compliment cast member and character he portrays, and to co-ordinate colours of costumes of entire cast.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- a two to four or more years program of apprenticeship; or
- two to four or more years of on-the-job training supplemented by

courses at a vocational training school, depending on the complexity of the occupation.

B

- from eight to ten years of general education;
- one to six months of on-the-job training and related experience in the garment industry.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and some additional training, lesser skilled workers may advance to higher skilled occupations within this chapter, or to appropriate occupations in Chapter 8566, INSPECTING, GRADING AND SAMPLING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, TEXTILE, FUR AND LEATHER PRODUCTS. Experienced workers with supervisory potential may also advance to 8550-114 FOREMAN, DRESSMAKERS or 8550-142 FOREMAN, TAILORS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Well qualified workers who acquire knowledge of business practices may also become self-employed.

Transfer

Transfer possibilities for workers in this chapter are usually limited to occupations requiring similar skills within the chapter. Transfer may be possible to 5135-178 SALESPERSON, WEARING APPAREL.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques, as in making and altering garments.

Additionally, for Cluster A:

- situations involving a preference for activities leading to satisfaction from tangible results.

Temperaments

A

- the evaluation of information against sensory or judgmental criteria, and measurable or verifiable criteria, to make or alter garments according to specifications and customers' wishes;
- the precise attainment of set limits, tolerances or standards;
- dealing with people in actual job duties beyond giving and receiving instructions.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the evaluation of information against measurable or verifiable criteria, as in fitting garments to specifications;
- the precise attainment of set limits, tolerances or standards.

FURRIERS

WORK PERFORMED

This chapter includes occupations concerned with making, altering, restyling and repairing natural fur garments and accessories. Worker functions include: compiling and analyzing information from customer as to size, quality and preferred style in order to estimate costs and select appropriate furs and patterns; working to precise standards when matching, cutting and joining furs; manipulating and handling fur pieces during selection, sewing and blocking operations; and comparing finished garments to specifications in order to detect flaws. Work activities include: arranging pelts on pattern; trimming parts of garment to conform to pattern; blocking pelts into desired shape; and cutting out and sewing linings and padding.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8555-110	FURRIER, ALL ROUND (fur goods)	4	7	8555-114	FUR CUTTER (fur goods)	3	7
				8555-122	FUR FINISHER (fur goods)	3	5

B

		GED	SVP
8555-118	FUR-REPAIR ESTIMATOR (fur goods; ret. trade)	3	6

C

		GED	SVP
8555-126	FUR BLOCKER (fur goods)	2	4

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	4	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	S-L 47	I	4-3	7-5	190	Y091
		3	3	<u>3</u>	<u>3</u>					5	4					19	Y09
B	<u>3</u>	4	3	4	<u>3</u>	4	4	4	4	5	<u>3</u>	L 47	I	3	6	192	9Y
C	4	4	4	<u>4</u>	4	4	<u>4</u>	4	<u>4</u>	5	4	L 4	I	2	4	13	23Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- spatial perception to visualize fit and drape of assembled garment from measurements, sketches and patterns, to cut pelts according to pattern, and to arrange pelts on pattern to achieve best appearance and symmetry;
- form perception to examine fur pelts for texture and quality, to notice minor items relative to style, designs and patterns, to do fine exacting work requiring constant attention to detail, and to inspect finished garment for flaws;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to cut furs using fur-cutting knife, to join furs together by hand or using sewing machine, and to iron linings;

- colour discrimination to grade, sort and match fur pelts.

Fur-Repair Estimator:

- learning ability to understand the techniques of furriery in order to estimate cost of restyling or repair;
- form perception to examine garment for frayed linings, worn spots and tears, to grade and match furs and to inspect finished garment;
- colour discrimination to match furs according to colour.

Fur Blocker:

- learning ability to apply the techniques of fur blocking;
- spatial perception to shape pelts according to pattern outline;
- eye-hand-finger co-ordination and manual dexterity to handle fur pelts and blocking equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A and B

- from ten to twelve years of general education;
- six months to four years of on-the-job training under the guidance of

an experienced worker, depending on the complexity of the occupation.

C

- eight years of general education;
- three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for workers in this chapter is normally to higher skilled occupations within the chapter. Experienced workers who develop a good sense of fashions may advance to 3313-130 FUR DESIGNER, or become self-employed. Workers with supervisory potential may advance to 8550-118 FOREMAN, FURRIERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Because of specialization, there are few possibilities for transfer for the higher skilled workers in this chapter, however, workers in the lesser skilled occupations may transfer to 6163-114 FUR CLEANER, 6169-130 FUR-STORAGE MAN, or 8566-146 FUR SORTER, HAT.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects, as in making, cutting and finishing fur garments and pelts;
- work which is basically non-social in nature and is carried on in relation to techniques and machines;
- work leading to satisfaction from tangible results, especially for 8555-110 FURRIER, ALL ROUND.

Temperaments

- the precise attainment of set limits, tolerances or standards, as in cutting fur pelts according to specifications;
- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria.

B

Interests

- dealing with things and objects, as in examining fur garments to detect damaged areas;
- work which is basically non-social in nature and is carried on in relation to processes, machines and techniques;
- business contact with people.

Temperaments

- the evaluation of information against sensory or judgmental criteria, as in estimating the cost of repairs to fur garments;
- the precise attainment of set limits, tolerances or standards.

C

Interests

- dealing with things and objects, as in blocking fur pelts to desired shape;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

MILLINERS, HAT AND CAP MAKERS

WORK PERFORMED

This chapter includes occupations concerned with fashioning and making hats, caps and related accessories. Worker functions include: analyzing data from original or existing designs, or from customers' specifications to determine the size and style of hat to be fashioned; working with precision to lay out, mark and cut patterns and material; tending machines to cut, stretch, press, form, abrade and buff hat parts and finished items; and manipulating and handling materials, trimmings, scissors, rulers and special irons to block, curl, shrink, assemble and decorate hats by hand. Work activities include: designing hats according to current styles and customers' specifications; laying out, cutting, piecing, sewing, forming and pressing textile, fur and leather materials into desired styles, shapes and sizes; and sorting and distributing hat parts and hats according to size, colour and style to facilitate assembly operations.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8557-110 MILLINER (ret. trade)

4 7

B

GED SVP

8557-114 HAT MAKER, FACTORY
(garment & fabric)

3 5

8557-118 HAT FINISHER, FELT
(garment & fabric)

2 4

8557-122 HAT BLOCKER, HAND
(garment & fabric)

2 3

8557-126 HAT-BRIM CURLER
(garment & fabric)

2 3

8557-130 HAT-CONE SHRINKER
(garment & fabric)

2 3

8557-134 HAT-DECORATION MAKER
(garment & fabric)

2 3

8557-138 HAT DECORATOR
(garment & fabric)

2 3

8557-142 HAT-FOUNDATION MAKER
(garment & fabric)

2 3

8557-146 HAT BLOCKER, MACHINE
(garment & fabric)

2 3

8557-150 HAT-BRIM CUTTER
(garment & fabric)

2 3

8557-154 HAT-BRIM-FLEXING-MACHINE
TENDER (garment & fabric)

2 3

8557-158 HAT-CONE FORMER
(garment & fabric)

2 3

8557-162 HAT-CROWN-AND-BRIM FORMER
(garment & fabric)

2 3

8557-166 HAT-GREASING-MACHINE
TENDER (garment & fabric)

2 3

8557-170 HAT-POUNCING-MACHINE
TENDER (garment & fabric)

2 3

8557-174 HAT PRESSER, MACHINE
(garment & fabric)

2 3

8557-178 HAT SORTER (garment & fabric)

2 3

8557-182 SERVICE GIRL, HAT FACTORY
(garment & fabric)

2 3

8557-186 EAR-MUFF ASSEMBLER
(fur goods; garment & fabric)

2 2

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>2</u>	L 47	I	4	7	9801	9Y14
B	4	4	4	4	<u>3</u>	5	<u>3</u>	4	<u>3</u>	4	5	L 47	I 4	3-2	5-2	139	230Y
			5	3	4	4		<u>3</u>		5	3						

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to acquire a thorough knowledge of millinery techniques and reasoning ability to plan and create original and fashionable hat designs;
- spatial perception to visualize shape, arrangement and relationship of materials, trimmings and ornaments when designing womens' hats;
- form perception to make accurate visual comparison of completed hat against existing or original design or specification;
- eye-hand-finger co-ordination for such precise activities as marking out and cutting patterns or materials to desired size and shape;
- finger dexterity to skilfully and nimbly perform a variety of hand sewing operations;
- manual dexterity to move the hands easily and skilfully when blocking or pressing hats into desired shape;
- colour discrimination to recognize differences or similarities in colours or shades of the same colour, when selecting contrasting or complementary coloured material.

B

- learning ability to understand and follow routine instructions and procedures related to various hand and machine operations in hat fabrication;
- form perception to visually detect loose fibres, wrinkles or other material imperfections;
- eye-hand co-ordination and finger dexterity to nimbly and accurately lace, tie, thread or perform hand and machine sewing operations;
- manual dexterity to work with the hands easily and skilfully when selecting, fitting, placing or positioning hat or hat parts, or when adjusting equipment.

All workers in this chapter require:

- physical capacity to reach for and handle a variety of lightweight articles, and to finger and feel material for smoothness and completeness of finish;
- near visual acuity to perform detailed and fine hand work such as marking, cutting, fitting, fastening and sewing;
- colour vision to sort millinery parts and trimmings, hats or ear-muffs according to specifications.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten to twelve years of general education;
- a two year program of vocational courses in fashion and designing,

and one or more years of related experience in other phases of hat making.

B

- eight to ten years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Experienced Milliners who develop a good fashion-sense may increase their earnings by creating new hat designs or by working for an exclusive fashion house. Those who acquire knowledge of business practices may become self-employed.

B

Some experienced workers in this cluster who acquire additional training, may advance to 8557-110 MILLINER. Those with supervisory potential may advance to 8550-122 FOREMAN, HAT AND CAP MAKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer for Milliners is normally limited, but may be to self-employment as owner of their own establishment. Workers in Cluster B may transfer to other occupations requiring similar skills within the cluster.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Milliners

Interests

- non-social work, carried on in relation to processes, machines and techniques, as in designing and making hats;
- abstract and creative work or experiences;
- activities leading to satisfaction from tangible results;
- dealing with things and objects.

Temperaments

- the evaluation of information against sensory or judgmental criteria, as in selecting or designing style of hat according to customers' desires;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change;
- the direction, control and planning of an entire activity or the activities or others.

B

Interests

- dealing with things and objects;
- routine, concrete and organized work;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

SHOEMAKING AND REPAIRING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with making and repairing leather, and leather-soled, fabric-topped footwear, by hand and machine. Worker functions include: manipulating shoe parts, hand tools and machine controls to shape and fabricate footwear; tending splitting machines, pressing machines or similar equipment to cut, shape, join or finish shoe parts; comparing quality and appearance of completed shoe or shoe parts to acceptable standards; and working to close tolerances when making custom shoes or repairs. Work activities include: forming materials over lasts into desired styles, shapes and sizes, cutting, trimming, sewing, nailing, tacking and assembling shoe parts; adjusting guides, cutting blades, stitchers and other mechanisms on machines and equipment; moving levers or depressing pedals to start and stop machines; and dyeing, tinting or staining shoes.

LIST OF OCCUPATIONS/SL TITLES

A

		GED	SVP			GED	SVP
8561-110	SHOEMAKER, CUSTOM (ret. trade; shoes)	3	7	8561-114	SHOE REPAIRMAN (ret. trade; shoes)	3	7
				8561-118	SHOE REPAIRER, FACTORY (shoes)	3	6

B

		GED	SVP			GED	SVP
8561-122	HEEL-SEAT FITTER (shoes)	3	4	8561-210	INKER, HAND (shoes)	2	2
8561-126	STITCHING-MACHINE OPERATOR (shoes)	2	4	8561-214	LAST IRONER (shoes)	2	2
8561-130	HAND STITCHER, SHOES (shoes)	2	4	8561-218	NAIL CUTTER (shoes)	2	2
8561-134	COUNTER AND UPPER TACKER (shoes)	2	3	8561-222	RELASTER (shoes)	2	2
8561-138	HEEL BREASTER (shoes)	2	3	8561-226	THREAD LASTER (shoes)	2	2
8561-142	LASTER (shoes)	2	3	8561-230	WRINKLE REMOVER (shoes)	2	2
8561-146	NOVELTY-SHOE LACER (shoes)	2	3	8561-234	BEVELER (shoes)	2	2
8561-150	SHOE-DECORATION ASSEMBLER (shoes)	2	3	8561-238	BUFFER, SHOE PARTS (shoes)	2	2
8561-154	SHOE DYER (ret. trade; shoes)	2	3	8561-242	CEMENTER, HAND (shoes)	2	2
8561-158	SHOE-REPAIRMAN HELPER (shoes)	2	3	8561-246	CHANNEL CLOSER (shoes)	2	2
8561-162	STEEL-TOE PLACER (shoes)	2	3	8561-250	CUT-OUT-AND-MARKING- MACHINE TENDER (shoes)	2	2
8561-166	WOOD-HEEL FINISHER (shoes)	2	3	8561-254	FEATHEREDGER AND REDUCER (shoes)	2	2
8561-170	BURNISHER (shoes)	2	3	8561-258	FOLDER, SHOE PARTS (shoes)	2	2
8561-174	CHANNELER (shoes)	2	3	8561-262	FORMER, SHOE PARTS (shoes)	2	2
8561-178	FASTENER, SHOE PARTS (shoes)	2	3	8561-266	GROOVER AND TURNER (shoes)	2	2
8561-182	HEEL ATTACHER (rubber; shoes)	2	3	8561-270	HEEL COMPRESSOR (shoes)	2	2
8561-186	HEEL BUILDER (shoes)	2	3	8561-274	HEEL SCORER (shoes)	2	2
8561-190	SOLE MOULDER (shoes)	2	3	8561-278	HEEL SHAPER (shoes)	2	2
8561-194	TRIMMER, SHOE PARTS (shoes)	2	3	8561-282	INKER, MACHINE (shoes)	2	2
8561-198	STOCK SORTER, SHOE PARTS (shoes)	2	3	8561-286	PERFORATING-MACHINE TENDER (shoes)	2	2
8561-202	BOTTOM FILLER (shoes)	2	2	8561-290	SHOE LACER, MACHINE (shoes)	2	2
8561-206	BOTTOM WHEELER (shoes)	2	2	8561-294	SMOOTHING-MACHINE TENDER (shoes)	2	2

CHAPTER 8561

		GED	SVP			GED	SVP
8561-298	SPLITTING-MACHINE TENDER (shoes)	2	2	8561-318	VAMP CREASER (shoes)	2	2
8561-302	STITCH SEPARATOR AND SIMULATOR (shoes)	2	2	8561-322	WELT-BUTTER AND TACKER (shoes)	2	2
8561-306	TACK-PULLER (shoes)	2	2	8561-326	CEMENT APPLICATOR (shoes)	2	2
8561-310	TAPER, SHOE PARTS (shoes)	2	2	8561-330	SHANKER (shoes)	2	2
8561-314	TOE AND HEEL SPRAYER (shoes)	2	2	8561-334	TRIMMER, HAND (shoes)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	3	L 47	I	3	7-6	901	Y01	
			5	4		5	4			4	4							
B	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	L 47	I 5	3-2	4-2	319	2Y3	
			5		<u>3</u>		<u>3</u>		<u>4</u>	5							23	

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply custom shoe making and shoe repairing techniques and to exercise considerable judgment in selecting the appropriate patterns, tools and materials;
- spatial perception to visualize size and shape of completed shoe when working from style drawings, prescriptions or other specifications;
- eye-hand co-ordination and finger dexterity to rapidly and accurately sew materials by hand or machine.

B

- learning ability to understand routine oral and written instructions and to apply them to perform a variety of hand and machine shoe making operations;

- eye-hand-finger co-ordination to accurately and precisely position and align parts in machines;
- eye-hand-foot co-ordination to position and hold parts in machines and to activate machine by depressing foot pedal;
- adaptability to working with, or in close proximity to machines that create considerable noise.

All workers in this chapter also require:

- form perception to make accurate visual comparisons of shoe or shoe parts to detect wrinkles, rough finishes or other imperfections;
- manual dexterity to work skilfully with knives, lasting tools, buffers, grinders, hammers or stretchers;
- physical capacity to reach for and handle a variety of light weight tools and materials;
- near visual acuity and depth perception to accurately stitch, cut, trim and assemble shoe parts.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten years of general education;
- a one-year program at a vocational school and up to two years of on-the-job training; or

- from two to four years of progressive experience and on-the-job training.

B

- eight years of general education;
- on-the-job training ranging from one to four months.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in Cluster B may advance to more skilled occupations within that cluster. Some who acquire experience and training in the various stages of shoe making may advance to occupations in Cluster A. Workers in Cluster A who acquire sufficient knowledge of business practices may successfully operate their own business. Experienced workers with supervisory potential may advance to 8550-138 FOREMAN, SHOE MAKING AND REPAIRING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer to other occupations is unlikely for workers in Cluster A. Workers in Cluster B may transfer to occupations requiring similar skills within that cluster and elsewhere in Minor Group 855/856, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to processes, machines and techniques, as in custom-making shoes;
- work resulting in tangible, productive satisfaction, such as making shoes according to customer's wishes;
- dealing with things and objects.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria to make or repair shoes according to specifications;
- a variety of duties often characterized by frequent change.

B

Interests

- routine, concrete and organized work;
- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

UPHOLSTERERS

WORK PERFORMED

This chapter includes occupations concerned with fabricating, rebuilding and repairing upholstered products such as chairs, sofas, aircraft and automobile interiors and mattresses, on a custom or mass-production basis. Worker functions include: manipulating materials, patterns, hand tools and stapling guns used in upholstering; working to close tolerances when laying out, cutting and sewing material or joining upholstered sections; compiling data on style, fabric and colour from drawings or customer specifications; computing amounts of material required from dimensions on drawings; and comparing quality and appearance of completed products to ensure acceptable standards are met. Work activities include: preparing patterns or templates for use in furniture or vehicle upholstery work; examining upholstery materials for damage or defects; installing padding, webbing and springs in furniture or automotive and aircraft seat frames; cutting, fitting and installing seat covers; and lining casket interiors.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8562-110	UPHOLSTERER, ALL AROUND (furn.)	4	7	8562-114	VEHICLE-UPHOLSTERY REPAIRMAN (furn.)	3	6
8562-112	PATTERNMAKER-AND- UPHOLSTERER, AIRCRAFT (air & space-craft)	4	7	8562-118	UPHOLSTERER, AIRCRAFT (air & space-craft)	3	5

B

		GED	SVP			GED	SVP
8562-120	CUTTER-AND-INSTALLER, SEAT COVER (motor vehicle)	3	4	8562-154	ASSEMBLER, CAR SEATS (furn.)	2	2
8562-122	UPHOLSTERY REPAIRMAN (furn.)	3	4	8562-158	BACK PADDER (furn.)	2	2
8562-126	SPRINGER (furn.)	2	4	8562-162	BOX-SPRING MAKER (furn.)	2	2
8562-130	CASKET COVERER (furn.)	2	3	8562-170	SPRING ASSEMBLER (furn.)	2	2
8562-134	CASKET LINER (furn.)	2	3	8562-174	FILLING-MACHINE TENDER (furn.)	2	2
8562-138	CHAIR UPHOLSTERER (furn.)	2	3	8562-178	PAD ASSEMBLER, HEAT SEAL PRESS (furn.)	2	2
8562-142	MATTRESS MAKER (furn.)	2	3	8562-182	UPHOLSTERY TRIMMER (furn.)	2	2
8562-146	PANEL COVERER (furn.)	2	3	8562-186	UPHOLSTERER HELPER (furn.)	2	1
8562-150	WIRE-BORDER ASSEMBLER (furn.)	2	3				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	L-M 347	I	4-3	7-5	901	Y0	
		3	3	<u>3</u>		5					<u>4</u>							
B	4	4	5	<u>4</u>	4	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 34	I	3-2	4-2	319	23Y	
			4		<u>3</u>			4	<u>4</u>	4	<u>3</u>							
											<u>4</u>							

APTITUDES AND CAPACITIES

Workers in these clusters require:

— learning ability to understand and apply upholstery techniques and procedures, and to select appropriate tools, objects and materials;

- spatial perception to visualize sizes, shapes, arrangement and relationship of materials and parts making up the upholstered product;
- form perception to distinguish details in materials and objects when marking, cutting and assembling upholstery material and parts, and to make visual inspections of finished work;
- eye-hand-finger co-ordination to rapidly place and fasten upholstery materials, and to use hand and power tools;
- finger dexterity to move the fingers and manipulate small objects rapidly and accurately to adjust and secure upholstery materials;
- manual dexterity to work with the hands easily and skilfully when selecting, cutting, fitting, placing and securing upholstery materials;
- colour discrimination to observe similarities or differences in colours and recognize harmonious or contrasting colour combinations, and to match colours accurately;
- sufficient strength to perform light to medium work requiring lifting of upholstered parts or furniture weighing up to fifty pounds, and to tighten special clamps;
- agility to work in awkward positions such as stooping, kneeling and crouching while upholstering;
- ability to finger and feel materials and to reach for hardware while assembling products;
- visual acuity for marking, cutting, fitting and fastening materials, and to obtain impressions for shapes, sizes and colours;

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten years of general education;
- a two to four-year apprenticeship program or similar form of on-the-job training; or

- up to one year of vocational training at an institute of technology or trade school and one to two years of on-the-job training;
- completion of certification requirements for 8562-114 VEHICLE-UPHOLSTERY REPAIRMAN in some provinces.

B

- eight years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training and experience, workers in Cluster B may advance to occupations requiring higher skills within that cluster, or in Cluster A. Workers in both clusters who have supervisory potential may advance to 8550-146 FOREMAN, UPHOLSTERERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Others may advance to occupations in quality control work, such as 8566-134 CUSHION-AND-COVER INSPECTOR. Upholsterers who acquire knowledge of business practices may advance to estimators or may become self-employed as owners of their own establishments.

Transfer

With limited additional training, workers may transfer to occupations requiring similar skills within their respective cluster. Transfer may also be to appropriate occupations requiring similar basic skills in Chapter 8551, PATTERNMAKING, MARKING AND CUTTING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to techniques, tools and machines, in related vocational courses and hobbies such as making repairs to or fabricating furniture;
- work which results in tangible productive satisfaction;
- dealing with things and objects, such as upholstered furniture and their materials.

Temperaments

- the precise attainment of set limits, tolerances or standards especially during matching, measuring, marking and cutting operations;
- the evaluation of information against measurable or verifiable criteria when dealing with specific measurements, materials and other specifications.

B

Interests

- work of a routine, concrete and organized nature, especially when working on a production line;
- dealing with things and objects, such as upholstered furniture, parts and materials;
- non-social work, carried on in relation to processes, tools and machines.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences when joining or fastening materials and assemblies;
- doing things only under specific instruction, allowing little or no room for independent action or judgment when working in an assembly line or when repairing, duplicating or matching products from samples or work orders;
- the precise attainment of set limits, tolerances or standards especially during measuring, marking, cutting and assembling operations.

SEWING MACHINE OPERATORS, TEXTILE AND SIMILAR MATERIALS

WORK PERFORMED

This chapter includes occupations concerned with the machine-sewing of textiles, leather, fur, synthetic and similar materials to produce, decorate or repair items such as garments, draperies, bedding, carpets and felt goods. Worker functions include: operating or tending single-or multiple-needle sewing machines to join, hem, embroider, mend, decorate or tuft material or products; and comparing sewn articles to specified standards to ensure proper stitching. Work activities include: selecting thread according to specifications or colour of fabric; placing spool on spindle and drawing thread through machine guides, tensions and needle eyes; starting, stopping and controlling speed of machine by actuating pedal, button or knee lever; guiding parts under needle, following edges, seams or markings; and patrolling work area to detect machine malfunctions when tending one or more automatic sewing machines.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8563-110	MENDER, TEXTILE PRODUCTS (textile)	3	4	8563-118	EMBROIDERY-MACHINE TENDER (textile)	2	4
8563-114	SEWING-MACHINE OPERATOR (any ind.)	2	4	8563-122	RUG SEWER (textile)	2	4
				8563-126	SEWING-MACHINE TENDER (any ind.)	2	2

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	4	<u>3</u>	<u>3</u>	5	<u>4</u>	<u>3</u>	<u>3</u>	4	4	L-M 47	I 5	3-2	4-2	319	2Y3
		5	<u>4</u>	<u>4</u>		<u>3</u>			5							

APTITUDES AND CAPACITIES

Sewing-Machine Operators require:

- learning ability to understand and apply machine-sewing techniques and to follow instructions;
- spatial perception to position article or material in machine and to thread, operate and adjust equipment;
- form perception to examine finished products for defects;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to thread, adjust and operate sewing machines, mending guns and

- fringing machines, and to cut material or thread using blade or scissors;
- near visual acuity to perform activities such as threading needles, aligning pointers on cloth frame with marks on machine chassis and observing needle and shuttle action, thread tension and alignment of stitches;
- adaptability to continual noise from own and adjacent sewing machines.

TRAINING AND ENTRY REQUIREMENTS

Sewing-Machine Operators normally require:

- up to eight years of general education;
- up to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter who acquire experience in the various phases of sewing during production of an article or garment may advance to appropriate occupations in Volume I, Unit Group 8550, FOREMEN: FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, TEXTILE, FUR AND LEATHER PRODUCTS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles. Advancement may also be to occupations in other chapters, for example 8553-178 SAMPLE-GARMENT MAKER and 8569-146 SEAMSTRESS, LINEN ROOM.

Transfer

Workers in this chapter may transfer to appropriate occupations requiring similar skills in other chapters, for example, 8566-130 INSPECTOR, GARMENT and 8569-167 CANVAS-COVER REPAIRMAN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- dealing with things and objects;
- non-social work carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- performing tasks only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

INSPECTING, GRADING AND SAMPLING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, TEXTILE, FUR AND LEATHER PRODUCTS

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the fabrication, assembly and repair of textile, fur and leather products. Worker functions include: comparing textile, fur and leather products with samples or standards to ensure conformance to specifications; manipulating tools such as scissors, knives and clippers to cut defective parts or trim excess material from products; handling a variety of products during inspection, sorting and grading activities; and recording data on inspection tags and production records. Work activities include: matching, measuring and feeling textile, fur or leather products to detect flaws or irregularities, or to estimate quality and value according to predetermined standards; removing and marking defective items; and stacking products.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8566-110	FUR SORTER (fur goods; leather tan. & fur dress.)	3	6	8566-114	LEATHER GRADER (garment & fabric)	3	5

B

		GED	SVP			GED	SVP
8566-118	INSPECTOR, LEATHER GOODS (leather goods)	2	4	8566-142	EXAMINER, GLOVES AND MITTENS (garment & fabric)	2	3
8566-122	SHOE INSPECTOR (shoes)	2	4	8566-146	FUR SORTER, HAT (fur goods)	2	3
8566-126	DRAPER (garment & fabric; knit goods)	2	4	8566-150	INSPECTOR, HAT (garment & fabric)	2	3
8566-130	INSPECTOR, GARMENT (garment & fabric; knit goods)	2	4	8566-154	INSPECTOR, MATTRESS (furn.)	2	3
8566-134	CUSHION-AND-COVER INSPECTOR (furn.)	2	3	8566-158	INSPECTOR, PARACHUTES (garment & fabric)	2	3
8566-138	INSPECTOR-GRADER, SECONDS (garment & fabric; knit goods)	2	3	8566-162	SAMPLE CLERK (garment & fabric)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	3	<u>2</u>	4	<u>3</u>	<u>3</u>	4	5	<u>2</u>	L-M 47	I	3	6-5	19	90Y	
					<u>3</u>		<u>4</u>											
B	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>3</u>	L 47	I	2	4-2	319	02Y	
					<u>3</u>		<u>4</u>	<u>4</u>	<u>4</u>		<u>4</u>							

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply quality-control procedures and reasoning ability to assess fur pelts and leather hides for conformance to specifications;
- form perception to perceive slight differences in shade, size, pattern

and density of fur when sorting fur skins, and to observe defects in leather hides such as scars and holes;

- eye-hand-finger co-ordination to manipulate, feel and examine furs and hides;
- colour discrimination to a high degree for detecting colour variances in different fur depths or during grading of hides and pelts;
- physical capacity for 8566-114 LEATHER GRADER to lift up to fifty pounds when stacking leather hides;

- near visual acuity to compare pelts with samples of each grade and to examine leather for defects such as scars and holes.

H

- learning ability to understand and apply quality-control techniques and to follow specifications;
- form perception to discern minute imperfections in leather and fabric products;
- eye-hand-finger co-ordination to trim excess material from products and press or smooth finished garments;

- finger dexterity to attach inspection tags, price tickets or labels to garments and to place inserts such as coins, combs and tissue paper into leather articles;
- manual dexterity to pick up, spread out and handle parts or finished products;
- colour discrimination to examine products for adherence to colour standards;
- near visual acuity to observe spots and stains on articles, to detect minute flaws such as defective material and stitching, crooked hems and tears, and to measure products for conformity to size.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- six months to two years of on-the-job training and related experience.

B

- seven to nine years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

A

Advancement for Fur Sorters may be to 8555-114 FUR CUTTER, and experienced workers with supervisory potential may advance to 8550-126 FOREMAN, INSPECTING, GRADING AND SAMPLING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

B

Advancement possibilities for workers in this cluster are limited, however, some experienced workers may advance to appropriate occupations in Chapter 8276, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, TEXTILE PROCESSING.

Transfer

A

Because of the specialized nature of the work, there are virtually no transfer possibilities for workers in this cluster.

B

Inspectors and graders of textile products in this cluster may transfer to occupations requiring similar skills in other chapters, for example, 8276-130 FABRIC INSPECTOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- activities that are basically non-social in nature and are performed in relation to machines, processes and techniques.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the evaluation of information against sensory or judgmental criteria, as in determining densities and heights of fur by feeling and visual examination;
- the evaluation of information against measurable or verifiable criteria, such as sorting skins and hides according to sample fur pelts and leather hides;
- the precise attainment of set limits, tolerances or standards.

B

- the evaluation of information against measurable or verifiable criteria, as in examining finished products against established standards;
- repetitive or short cycle operations performed according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING AND REPAIRING, TEXTILE, FUR AND LEATHER PRODUCTS

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in the fabrication, assembly and repair of textile, fur and leather products. Worker functions include: feeding materials or parts into specialized processing machines or equipment; and offbearing finished products; and handling scissors, tools, brushes and other items while performing routine tasks. Work activities include: cutting materials into specified lengths; trimming, treating, coating, staining or cleaning parts or products to impart finish; and folding, sorting or pairing products prior to packaging.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8568-110	CONE DRYER, HAT (garment & fabric)	1	2	8568-182	LABOURER, BOOT AND SHOE (shoes)	1	2
8568-114	GLOVE-TURNER-AND-FORMER, AUTOMATIC (garment & fabric)	1	2	8568-186	LABOURER, COATING AND EMBOSSING (linoleum prod.)	1	2
8568-118	HAT TREATER (garment & fabric)	1	2	8568-187	LABOURER, FURRIER SHOP (fur goods)	1	2
8568-122	LABEL-HEAT TACKER (garment & fabric)	1	2	8568-190	LACER (sport. & toy)	1	2
8568-123	PERFORATING-MACHINE TENDER (garment & fabric)	1	2	8568-194	LAY-UP MAN (garment & fabric)	1	2
8568-124	PINKING-MACHINE TENDER (garment & fabric; shoes)	1	2	8568-198	LENGTH CUTTER, HAND (any ind.)	1	2
8568-126	PRESSING-MACHINE FEEDER (garment & fabric; knit goods)	1	2	8568-202	LINK CUTTER (knit goods)	1	2
8568-127	SOLE FLEXER (shoes)	1	2*	8568-206	SHOE CLEANER (shoes)	1	2
8568-130	ANTI-SQUEAK FILLER (shoes)	1	2	8568-210	SHOE-PARTS DIPPER (shoes)	1	2
8568-134	BAG LINER (misc. prod. fab., n.e.c.)	1	2	8568-214	SPIKE INSTALLER, GOLF-SHOE (shoes)	1	2
8568-138	BUCKLE SHAPER (misc. prod. fab., n.e.c.)	1	2	8568-218	SPORTS-EQUIPMENT FILLER (sport. & toy)	1	2
8568-142	BUFFING-DISK ASSEMBLER, CLOTH (non- metal. min. prod., n.e.c.)	1	2	8568-219	STEAM-CABINET ATTENDANT (garment & fabric)	1	2
8568-146	LABOURER, DRAPERY (garment & fabric)	1	2	8568-222	STUFFER (misc. prod. fab., n.e.c.)	1	2
8568-150	EDGE STAINER, BELT (leather goods)	1	2	8568-226	THREAD TRIMMER, MACHINE (any ind.)	1	2
8568-154	EMBROIDERY-FRAME MOUNTER (garment & fabric; knit goods)	1	2	8568-230	TRIMMER, HAND (any ind.)	1	2
8568-158	FINAL ASSEMBLER, GARMENT (garment & fabric)	1	2	8568-234	TURNER (any ind.)	1	2
8568-162	GARMENT FOLDER (garment & fabric)	1	2	8568-238	HAT-SWEATBAND FLANGER (garment & fabric)	1	1
8568-166	GLOVE LINER (garment & fabric)	1	2	8568-242	LABOURER, PADDING (textile)	1	1
8568-170	GLOVE PAIRER (garment & fabric)	1	2	8568-246	BALE OPENER (textile)	1	1
8568-174	HAT BRUSHER (garment & fabric)	1	2	8568-250	DRAW-STRING INSERTER (knit goods)	1	1
8568-178	HAT-LINING CEMENTER (garment & fabric)	1	2	8568-254	GARMENT RIPPER (garment & fabric)	1	1
				8568-258	HANDLE MOUNTER (leather goods)	1	1
				8568-262	LINING INSERTER, SKATES (shoes)	1	1
				8568-266	PADDING CUTTER (furn.)	1	1

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	5	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5		L 4	I	1	2-1	31	23
	4	4	5					<u>3</u>	4								

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple instructions;

- eye-hand-finger co-ordination and manual dexterity to reach for and handle tools, equipment and products.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specified educational level;

- on-the-job training ranging from a short demonstration up to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs and advancement is normally to more highly skilled occupations in Minor Group 855/856 FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS for workers who demonstrate ability, interest and initiative.

Transfer

Transfer may be to other occupations within this chapter or to labouring and elemental occupations requiring similar skills in other chapters, such as 8578, OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING AND REPAIRING RUBBER, PLASTIC AND RELATED PRODUCTS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS: TEXTILE AND LEATHER PRODUCTS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with fabricating, assembling and repairing products made of textiles, leather and plastics, such as drapery, canvas bags, belts, luggage, wallets and handbags.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints. Temps.		
		G	V	N	S	P	Q	K	F	M	E	C						
8569-110	CANVAS WORKER (garment & fabric)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	H 2347	B	3	7	190	Y0
8569-114	RUG REPAIRMAN (textile)	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>2</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	M 47	I	4	6	190	Y0
8569-118	HARNESS MAKER (leather goods)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 4	I	3	6	190	Y0
8569-122	INSOLE-TAPE MAKER (shoes)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I	3	6	91	Y0
8569-126	LAMP-SHADE SEWER (misc. prod. fab., n.e.c.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S 47	I	3	6	19	Y0
8569-130	LUGGAGE REPAIRMAN (leather goods)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 4	I	3	5	19	Y0
8569-134	ORTHOPEDIC-APPAREL ASSEMBLER (scient. & ind. equip., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	3	5	19	Y0
8569-138	REPAIR WEAVER (garment & fabric; textile)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	5	<u>2</u>	<u>2</u>	<u>3</u>	4	4	S 47	I	3	5	19	0Y
8569-142	BEAD WORKER (shoes; leather goods)	4	4	5	<u>4</u>	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S 47	I	3	5	193	2Y
8569-146	SEAMSTRESS, LINEN ROOM (cater. & lodg.; laund., clean. & press.)	3	4	4	<u>3</u>	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	4	M 47	I 5	3	5	193	Y02
8569-150	DRAPERY-HEADING MAKER (garment & fabric; ret. trade)	4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I	3	4	193	Y02
8569-154	FINISHER, HAND (garment & fabric)	4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I	3	4	193	2Y
8569-158	LEATHER WORKER (leather goods)	4	4	5	<u>4</u>	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 4	I	3	4	13	2Y
8569-162	LUGGAGE-SHELL BONDER (leather goods)	4	4	4	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5	L 47	I	3	4	139	2Y
8569-166	SKIVER, MACHINE (leather goods)	4	4	4	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	<u>4</u>	5	S 47	I	3	4	139	2Y
8569-167	CANVAS-COVER REPAIRMAN (any ind.)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I	2	4	13	2Y
8569-170	CROCHETER, HAND (knit goods)	4	4	4	3	<u>3</u>	5	<u>2</u>	<u>3</u>	<u>3</u>	5	4	S 47	I	2	4	139	2Y
8569-174	EMBROIDERER, HAND (garment & fabric; knit goods)	4	4	4	4	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S 47	I	2	4	139	2Y
8569-178	BALL STITCHER, HAND (sport. & toy)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	2	3	31	23Y
8569-182	CASE MAKER (leather goods)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	2	3	31	23Y
8569-186	FINDING ATTACHER (leather goods)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	2	3	31	23Y
8569-190	GRIP WRAPPER (sport. & toy)	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	4	L 47	I	2	3	31	23Y
8569-194	HAND SEWER (any ind.)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S 347	I	2	3	31	23Y
8569-198	KNIT GOODS MENDER (knit goods)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S 47	I	2	3	31	23Y
8569-202	NET MAKER (misc. prod. fab., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	2	3	31	23Y
8569-206	PARACHUTE STRINGER (garment & fabric)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	2	3	31	23Y
8569-210	PASSEMENTERIE SEWER (misc. prod. fab., n.e.c.)	4	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S 47	I	2	3	31	2Y
8569-214	PLEATER, HAND (garment & fabric)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I	2	3	31	23Y
8569-218	BAG-TURNING-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	4	4	4	4	<u>4</u>	<u>4</u>	<u>3</u>	5	5	M 347	I	2	3	31	23Y
8569-222	FIBRE-STRAP-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	4	L 47	I	2	3	319	23Y
8569-226	ORNAMENT SETTER (leather goods)	4	4	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	<u>4</u>	5	L 47	I 5	2	3	319	23Y
8569-230	SHOELACE-TIPPING-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 347	I	2	3	319	23Y
8569-234	LEATHER STOCKMAN (shoes)	4	4	4	4	<u>3</u>	<u>4</u>	4	4	<u>3</u>	5	4	M 234	I	2	3	31	20Y

GROUP 8569

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
8569-238	WATERPROOFER, GARMENTS (garment & fabric)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	M 47	I 4	2	3	31	23
8569-242	BASEBALL-GLOVE SHAPER (sport. & toy)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I	2	2	31	23Y
8569-246	COVERER, LUGGAGE (leather goods)	4	4	5	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	4	5	L 47	I	2	2	31	23Y
8569-247	CRUSHER (garment & fabric)	4	4	4	4	4	5	<u>3</u>	4	<u>3</u>	5	4	L 4	I	2	2	31	2Y
8569-250	HANDBAG FRAMER (leather goods)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	L 47	I	2	2	31	23
8569-254	HARNESS RIGGER (garment & fabric)	4	4	5	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	2	2	31	23
8569-258	LUGGAGE-HANDLE MAKER (leather goods)	4	4	5	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	2	2	31	23Y
8569-262	NYLON-HOSE SLITTER (knit goods)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I	2	2	31	23Y
8569-266	PARACHUTE FOLDER (garment & fabric)	4	4	5	4	4	5	<u>3</u>	4	<u>3</u>	5	5	L 47	I	2	2	31	23Y
8569-267	UPHOLSTERY CLEANER AND FINISHER (furn.)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 34	I	2	2	31	23Y
8569-270	BUTTON-ATTACHING-MACHINE TENDER (garment & fabric)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	L 47	I	2	2	319	23Y
8569-274	COLLAR AND BELT TURNER (garment & fabric)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	L 47	I	2	2	319	23Y
8569-278	CREASING-MACHINE TENDER (garment & fabric)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	319	23
8569-282	CRIMPING-MACHINE TENDER (any ind.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	4	L 47	I 5	2	2	319	23
8569-286	DRAPERY PLEATER, MACHINE (garment & fabric)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I	2	2	319	23
8569-287	EMBOSSER, FOOTWEAR (shoes)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	<u>4</u>	4	L 4	I 5	2	2	319	23Y
8569-290	EYELET-PUNCHING-MACHINE TENDER (furn.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	L 47	I	2	2	319	23
8569-294	FOLDING-MACHINE TENDER (leather goods)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5	L 47	I	2	2	319	23
8569-298	GARMENT STEAMER (laund., clean. & press.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	L 47	I 34	2	2	319	23
8569-302	GAUZE-PAD-MACHINE TENDER (textile)	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	L 47	I 5	2	2	319	23
8569-306	HANDLE-AND-VENT-MACHINE TENDER (furn.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	319	23
8569-307	LABEL-CUTTING-MACHINE TENDER (garment & fabric)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	319	23
8569-310	LEATHER-BELT MAKER (leather goods)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5	L 47	I	2	2	319	23Y
8569-314	MANGLER (garment & fabric)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I	2	2	319	23Y
8569-318	PERMANENT-PRESS SPRAYER, MACHINE (GARMENT & fabric)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	L 47	I 5	2	2	319	23Y
8569-322	PLEATING-MACHINE TENDER (garment & fabric)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	L 47	I	2	2	319	23Y
8569-326	ROLLER-MACHINE TENDER (leather tan. & fur dress.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 347	I 4	2	2	319	23
8569-327	SLITTER TENDER, KNIT TUBING (knit goods)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	M 347	I 6	2	2	319	23Y
8569-330	SPREADER, MACHINE (garment & fabric; knit goods; textile)	4	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	3	M 47	I	2	2	319	23Y
8569-334	THREAD-CUTTER TENDER (textile)	4	4	5	4	<u>3</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	4	5	L 47	I 5	2	2	319	23Y
8569-338	SOCK BOARDER (knit goods)Y'	4	4	4	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>4</u>	5	5	M 47	I 3	2	2	31	23
8569-342	DRAPERY PLEATER, HAND (garment & fabric)	4	4	4	<u>4</u>	4	5	<u>4</u>	<u>4</u>	<u>4</u>	5	5	L 47	I	2	2	31	23

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes								PA	EC	GED	SVP	Ints.	Temps.			
		G	V	N	S	P	Q	K	F							M	E	C
8569-346	GARMENT-PARTS SORTER (garment & fabric; knit goods)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	<u>4</u>	L 47	I	2	2	31	23
8569-350	BELT LINER (leather goods)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	31	23
8569-351	EMBROIDERY-MACHINE CHANGER (garment & fabric; textile)	4	4	5	4	4	5	<u>4</u>	<u>4</u>	<u>4</u>	4	5	L 47	I	2	2	31	23
8569-354	FLOCKER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	4	L 47	I	2	2	31	23
8569-358	FLOOR WORKER, PARACHUTES (garment & fabric)	4	4	4	<u>4</u>	4	4	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	31	23

BONDING AND CEMENTING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS

WORK PERFORMED

This chapter includes occupations concerned with bonding and cementing rubber or plastic materials to produce a variety of parts or products such as re-capped tires, plastic toys, rubber belts and footwear. Worker functions include: manipulating materials, tools and work aids to build or assemble products; tending machines that cement, bond, fit or splice parts or materials; and comparing finish, weight or dimensions of completed articles to established standards. Work activities include: installing machine parts and attachments; adjusting machine controls and guides to regulate temperature and pressure of rollers, flow of rubber cement and other variables; feeding rubber or plastic materials into machines; building up plies of rubber and fabric by hand to produce belts; and examining completed products for defects.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8571-110	BELT BUILDER (rubber)	3	5	8571-170	SPLICER (rubber)	2	2
8571-114	TIRE REPAIRER-VULCANIZER (rubber)	2	4	8571-174	SPONGE-GASKET ASSEMBLER (rubber)	2	2
8571-118	TIRE RETREADER (rubber)	3	3	8571-178	TUBE SKIVER AND SPLICER (rubber)	2	2
8571-122	TIRE-RETREADING-MACHINE TENDER (rubber)	3	3	8571-182	WADING-BOOT-TOP ASSEMBLER (rubber)	2	2
8571-126	ROLL BUILDER (rubber)	2	3	8571-186	BAND-STOCK PREPARER (rubber)	2	2
8571-130	RUBBER-FOOTWEAR ASSEMBLER (rubber)	2	3	8571-190	CEMENTER, MACHINE (rubber)	2	2
8571-134	SNOWTRACK BUILDER, RUBBER (rubber)	2	3	8571-194	GREEN-TIRE LUBRICATOR (rubber)	2	2
8571-138	V-BELT BUILDER (rubber)	2	3	8571-198	HEAT-SEALING-MACHINE TENDER (plastic prod.)	2	2
8571-142	BRAIDING-MACHINE TENDER (rubber)	2	3	8571-202	PRESS TENDER (rubber)	2	2
8571-146	STRAP-FOLDING-MACHINE TENDER (rubber)	2	2	8571-206	RUBBER-TUBING SPLICER (rubber)	2	2
8571-150	AUTOMOTIVE-DOOR-PANELLING ASSEMBLER (plastic. prod.)	2	2	8571-210	SPLICING-MACHINE TENDER (rubber)	2	2
8571-154	BAND BUILDER (rubber)	2	2	8571-214	TUBE SPLICER, MACHINE (rubber)	2	2
8571-158	BELT-BUILDER HELPER (rubber)	2	2	8571-218	HAND BONDER, RUBBER FOOTWEAR (rubber)	2	2
8571-162	CONVEYOR-BELT SPLICER (rubber)	2	2	8571-222	PLASTIC-TOY ASSEMBLER (sport. & toy)	2	2
8571-166	RUBBER-AND-CANVAS-FOOTWEAR DIPPER (rubber)	2	2	8571-226	RUBBER-CLOSURE INSTALLER (rubber)	2	2

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	4	5		L-H 4	I 7	3-2	5-2	319	2Y3
		4		<u>3</u>	4	<u>3</u>		<u>4</u>	5								

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply the techniques and procedures of bonding and cementing rubber or plastic materials by hand or special machines;
- form perception to visually examine products for physical defects such as bubbles, lumps, loose edges or misaligned parts;
- eye-hand co-ordination and finger dexterity to set and adjust controls, position and align parts and assemble rubber footwear, door panels or plastic toys;

- manual dexterity to work skilfully with knives, shears, hand rollers, brushes or other tools;
- physical capacity to perform light to heavy work, to reach for and handle a variety of objects, and to use the hands and fingers to smooth materials or make firm bonds;
- adaptability to unpleasant odours from rubber and adhesives.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- six to nine years of general education;

- one to six months of on-the-job training.
- for 8571-110 BELT BUILDER, six months related experience normally as 8571-158 BELT-BUILDER HELPER.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement possibilities within the chapter are limited, however, experienced workers with supervisory potential may advance to appropriate occupations in Volume I, Unit Group 8570, FOREMEN: FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Some workers such as 8571-114 TIRE REPAIRER-VULCANIZER, and 8571-118 TIRE RETREADER who acquire knowledge of business practices may become self-employed.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within this chapter. With limited additional training, transfer possibilities may also be to appropriate occupations throughout Minor Group 857, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work such as tending automatic machines;
- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences such as positioning materials into machines and adjusting machine controls and guides;
- the precise attainment of set limits, tolerances or standards;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

MOULDING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS

WORK PERFORMED

This chapter includes occupations concerned with moulding, pressing and curing rubber, plastic or related materials by such processes as injection, compression, lamination and vulcanization, to produce parts for mechanical or electrical equipment, household ware, vehicle tires and other articles. Worker functions include: setting up, operating or tending heaters, presses, injection-moulding machines, extruding machines or related equipment; manipulating equipment controls and hand tools or other devices to form or work products; working to close tolerances when moulding and finishing rubber stamps for printing or ear pieces for hearing aids; comparing dimensions and surface finish of completed products to specified standards; and compiling data on job specifications from drawings or work orders. Work activities include: installing dies, rollers, stampers and other components in machines and connecting water and steam lines; weighing and mixing granular or liquid moulding materials; dumping materials into machine hoppers; actuating controls to start, stop and regulate operation of equipment; and examining products for bubbles, cracks, warping and other defects.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8573-110	PLASTICS-MOULDING-MACHINE SETTER (plastic prod.)	4	6	8573-162	HEARING-AID-EARPIECE MAKER (scient. & ind. equip., n.e.c.)	3	5
8573-114	RUBBER-STAMP MAKER (misc. prod. fab., n.e.c.)	3	6	8573-222	CURING PRESSMAN (rubber)	3	5

B

		GED	SVP			GED	SVP
8573-166	EXTRUDING-MACHINE OPERATOR (plastic prod.; rubber)	3	4	8573-168	PRINTING-ROLLER MOULDER (plastic prod.; rubber)	3	4
8573-118	PLASTICS-PRESS OPERATOR (plastic prod.)	3	4	8573-122	BEAD-FORMING-MACHINE OPERATOR (rubber)	3	3
				8573-126	STRIP-MACHINE OPERATOR (rubber)	3	3

C

		GED	SVP			GED	SVP
8573-170	DISPLAY-MANNEQUIN MOULDER (plastic prod.)	2	4	8573-190	BLADDER MOULDER (rubber)	2	2
8573-174	RUBBER MOULDER (rubber)	2	3	8573-134	CURING-PRESS TENDER (asbestos & min. wool)	2	2
8573-178	COMPRESSION-MOULDING-MACHINE TENDER (plastic prod.)	2	3	8573-232	FIRE-HOSE CURER (rubber)	2	2
				8573-233	HEATER TENDER (rubber)	2	2
8573-226	FOAM-RUBBER CUREMAN (rubber)	2	3	8573-194	INJECTION-MOULDING-MACHINE TENDER (plastic prod.)	2	2
8573-180	IMPREGNATOR-CORRUGATOR, PLASTIC SHEETS (plastic prod.)	2	3	8573-138	PRESSMAN (plastic prod.; rubber)	2	2
8573-186	EXTRUDING-MACHINE-OPERATOR HELPER (plastic prod.; rubber)	2	2	8573-142	RECORD-PRESS TENDER (plastic prod.)	2	2
8573-182	PLASTICS CASTER (plastic prod.)	2	2	8573-198	SKIN FORMER (plastic prod.)	2	2
8573-130	PLATE CHANGER (plastic prod.)	2	2	8573-200	SOFTBALL-CENTER MOULDER (sport & toy)	2	2
8573-230	V-BELT CURER (rubber)	2	2	8573-202	TIRE-TREAD MOULDER (rubber)	2	2

		GED	SVP			GED	SVP
8573-146	VACUUM-FORMING-MACHINE TENDER (plastic prod.)	2	2	8573-206	MOULD FILLER AND STRIPPER (plastic prod.)	2	2
8573-234	VULCANIZER TENDER (rubber)	2	2				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	L-M 47	I	4-3	6-5	91	Y0	
		4	5	<u>4</u>	<u>4</u>	5				5								
B	4	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-M 47	I 7	3	4-3	913	Y02	
	3			<u>3</u>	<u>4</u>	5	<u>3</u>	3	<u>4</u>	4	4							
C	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L-M 47	I 35	2	4-2	319	23Y	
			5		<u>3</u>	4	<u>3</u>			4								

APTITUDES AND CAPACITIES

Workers in these clusters require:

A and B

- learning ability to understand the techniques of moulding rubber, plastic and related products, and to apply these techniques to set-up and operate compression and injection moulding machines and moulding and curing presses;
- spatial perception to observe machines in operation and note malfunctions or need for adjustment; to visualize the relationship and arrangement of parts and materials when setting up machines; and to visualize shape and appearance of completed product;
- form perception to examine products for surface defects such as bubbles, warping, splits and scratches;
- eye-hand-finger co-ordination and finger dexterity to set up moulding machines; to set type in chase of mould press to make rubber stamps; and make running adjustments to machines, such as synchronizing speed of emerging extrusion with take-up reel or conveyor;
- manual dexterity to mount moulds on press beds, connect steam, oil and water lines to mould, turn valves to regulate flow of water or steam through dies or plates and measure extruded or moulded material for conformance to specified dimensions;
- sufficient strength to perform medium work requiring frequent lifting and carrying of objects weighing up to twenty pounds, and lifting of objects weighing up to fifty pounds;

- near visual acuity to examine materials for defects such as bubbles, cracks, dents, scratches and wrinkles, and to read measuring instruments such as micrometers, calipers and gauges;
- adaptability to conditions such as heat, noise and the possibility of mechanical hazards and burns from moulding machines, especially for 8573-110 PLASTICS-MOULDING-MACHINE SETTER, 8573-118 PLASTICS-PRESS OPERATOR and 8573-222 CUR-ING PRESSMAN.

C

- learning ability to understand moulding operations, and to carry out detailed written or oral work instructions;
- form perception to examine product for surface defects such as scratches, burrs or pits, cracks, dents and voids;
- eye-hand co-ordination and manual dexterity for such activities as placing metal patterns of specified contour into press beds, weighing and mixing ingredients, placing various materials into dies, pushing buttons to control press temperature and time cycles, stripping away moulded articles, and trimming excess material from products;
- sufficient strength to perform medium work requiring the frequent lifting and carrying of objects weighing up to twenty pounds, and lifting of objects weighing up to fifty pounds.

Additionally, for certain occupations in Clusters B and C:

- adaptability to working in atmospheric conditions containing fumes, dusts and odours from hot plastic and rubber materials.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- six months to two years of on-the-job training and related experience in rubber or plastic moulding.

B

- eight to ten years of general education;

C

- one to six months of on-the-job training.
- eight years of general education;
- one to three months of on-the-job training.
- for 8573-170 DISPLAY-MANNEQUIN MOULDER, six months of on-the-job training and experience in moulding and casting.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and some additional training, workers in these clusters may advance to higher skilled occupations within the chapter, for example, 8573-186 EXTRUDING-MACHINE-OPERATOR HELPER may advance to 8573-166 EXTRUDING-MACHINE OPERATOR and similarly 8573-134 CURING-PRESS TENDER and 8573-138 PRESSMAN may advance to 8573-118 PLASTICS-PRESS OPERATOR. Those with supervisory potential may advance to 8570-122 FOREMAN, PLASTIC PRODUCTS FABRICATING, ASSEMBLING AND REPAIRING or 8570-126 FOREMAN, RUBBER PRODUCTS FABRICATING, ASSEMBLING AND REPAIRING. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within their respective cluster or with limited additional training to other appropriate occupations in Minor Group 857, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Clusters B and C:

- routine, concrete and organized work.

Temperaments

A and B

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

Additionally, for Cluster B:

- repetitive or short cycle operations carried out according to set procedures or sequences.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

CUTTING AND FINISHING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS

WORK PERFORMED

This chapter includes occupations concerned with cutting, assembling and finishing rubber and plastic stock to produce plastic floor tiles, tires, rubber footwear parts, rubber air-brake hoses, automotive dashboards, plastic aircraft parts and similar articles. Worker functions include: operating or tending machines to cut, punch, press, drill, wash, dry or wind parts or products made from rubber, plastic and similar materials; manipulating knives, scissors, saws, templates and patterns to mark material and to trim, shape and buff articles; analyzing data from specifications and customers' requirements to determine design and select material from stock; working to close tolerances to lay out patterns; computing dimensions, quantity of materials and location of cutting lines; and comparing finished products with specified standards. Work activities include: adjusting machine controls and guides; mounting cutting dies, knives, grinding wheels and similar equipment in machines; verifying dimensions of finished parts or articles; and examining products for defects.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8575-110	FLOOR-COVERING-INSET CUTTER (linoleum prod.)	3	6	8575-114	PLASTIC-SHEET WORKER (plastic prod.)	3	6
				8575-118	DISPLAY-BALLOON MAKER (misc. prod. fab., n.e.c.)	4	5

B

		GED	SVP			GED	SVP
8575-122	ARCH-CUSHION-SKIVING-MACHINE OPERATOR (rubber)	3	4	8575-130	OUTSOLE-CUTTING-MACHINE OPERATOR (rubber)	3	3
8575-126	BIAS-MACHINE OPERATOR (rubber)	3	3	8575-134	RUBBER-GOODS CUTTER-FINISHER (rubber)	3	3
				8575-138	AIR-BRAKE-HOSE BUILDER AND FINISHER (rubber)	3	3

C

		GED	SVP			GED	SVP
8575-142	CUTTER, RUBBER AND PLASTICS (plastic prod.; rubber)	2	3	8575-170	FOAM-CUSHION FABRICATOR (furn.; plastic prod.; rubber)	2	2
8575-146	GASKET MAKER, CONCRETE PIPE (rubber)	2	3	8575-174	LUGGAGE-BINDING ASSEMBLER (leather goods; plastic prod.)	2	2
8575-150	PADDED-PRODUCTS REPAIRMAN (plastic prod.; rubber)	2	3	8575-178	RUBBER BUFFER (rubber)	2	2
8575-154	REELER AND CUTTER, PLASTIC MATERIAL (plastic prod.)	2	3	8575-182	SKYLIGHT ASSEMBLER (plastic prod.)	2	2
8575-158	WINK CUTTER (rubber)	2	3	8575-186	SOLID-TIRE FINISHER (rubber)	2	2
8575-162	AIRCRAFT-TIRE-TUBE BALANCER (rubber)	2	2	8575-190	STOCK LAY-UP MAN (rubber)	2	2
8575-166	BEAD ROLLER, BALLOON (rubber)	2	2	8575-194	TIRE TRIMMER, HAND (rubber)	2	2
				8575-198	TRIMMER, MACHINE (rubber)	2	2

D

		GED	SVP			GED	SVP
8575-202	AUTOMOTIVE-RUBBER-PARTS CUTTER (rubber)	2	2	8575-234	TILE CUTTER (linoleum prod.)	2	2
8575-206	EDGE GRINDER, FLOOR TILE (linoleum prod.)	2	2	8575-238	TREAD CUTTER, MACHINE (rubber)	2	2
8575-210	FOOTWEAR-TREAD-MACHINE TENDER (rubber)	2	2	8575-242	TREAD CUTTER, TRUCK TIRES (rubber)	2	2
8575-214	FREEZE-TUMBLER TENDER (rubber)	2	2	8575-246	V-BELT FINISHER (rubber)	2	2
8575-218	INNER-TUBE-PROCESSING-EQUIPMENT TENDER (rubber)	2	2	8575-250	V-BELT SKIVER (rubber)	2	2
8575-222	RUBBER-BAND CUTTER (rubber)	2	2	8575-254	WASHER-DRIER, RUBBER PRODUCTS (rubber)	2	2
8575-226	SPLITTING-MACHINE TENDER (rubber)	2	2	8575-258	INNER-TUBE-PROCESSING-EQUIPMENT UTILITY MAN (rubber)	2	2
8575-230	STRAP-CUTTING-MACHINE TENDER (rubber; shoes)	2	2	8575-262	HOSE CUTTER, HAND (rubber)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>3</u>	L-M 47	I	4-3	6-5	19 190	Y01
		3								4	4						
										5							
B	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	5	L-M 4	I	3	4-3	931	2Y
					<u>3</u>		<u>4</u>			<u>5</u>							
										<u>3</u>							
C	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L-H 4	I	2	3-2	139	2Y3
							<u>3</u>			<u>4</u>							
D	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>4</u>	4	5	L-H 4	I 5	2	2	319	23Y
								<u>3</u>	<u>5</u>								

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand the techniques and procedures involved in working with rubber and plastic materials and to apply them to design, cut and fabricate a variety of products;
- spatial perception to visualize the size, shape, relationship and arrangement of parts represented in layouts or specifications;
- eye-hand-finger co-ordination to use draughting instruments to lay out and make patterns, and cutting tools to cut along marked lines;
- colour discrimination for 8575-110 FLOOR-COVERING-INSET CUTTER to select harmonious shades and colours that will enhance appearance of finished product;
- near visual acuity to read graduations on measuring instruments and to accurately follow patterns or designs.

B, C and D

- learning ability to understand and follow written or oral instructions, and to acquire a knowledge of machine operations related to cutting and finishing rubber or plastic materials;

- eye-hand-finger co-ordination to make rapid and precise movements when adjusting machine controls, or when using cutting tools, such as knives, scissors or saws;
- eye-hand-foot co-ordination required for some occupations in Clusters A and B to position material, adjust settings and depress pedal to activate or control machine.

Additionally, for occupations in Cluster D:

- adaptability to working on, or in close proximity to, machines that create considerable noise.

All workers in these clusters also require:

- form perception to make visual comparisons of materials or products to detect cuts, blisters, cracks, wrinkles or other physical defects;
- finger dexterity to manipulate small objects such as nuts, bolts, screws and rivets, to thread materials through machine guides, or to tag and tie packages and bundles;
- manual dexterity to skilfully use routers, drills, sanders, wrenches or other hand and power tools;
- physical capacity to perform light to heavy work, and to reach for and handle a variety of parts, tools, materials and products.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to twelve years of general education;
- six months to two years of on-the-job training.

B

- eight to ten years of general education;

- one to six months of on-the-job training.

C and D

- six to eight years of general education;
- two weeks to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may, with limited additional training, advance to appropriate occupations requiring similar basic skills elsewhere in Minor Group 857, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS. Workers with supervisory potential may advance to appropriate foreman occupations in 8570, FOREMEN: FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities for workers in this chapter may be to other occupations requiring similar skills within their own or in other clusters, or in other chapters such as 8393, FILING, GRINDING, BUFFING, CLEANING AND POLISHING OCCUPATIONS, N.E.C. and 8561, SHOEMAKING AND REPAIRING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Additionally, for 8575-118 DISPLAY-BALLOON MAKER:

- activities leading to satisfaction from tangible results.

Additionally, for Clusters B, C and D:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change.

B, C and D

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

Additionally, for Clusters C and D:

- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, RUBBER, PLASTIC AND RELATED PRODUCTS

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the fabrication, assembly and repair of rubber, plastic, and related products. Worker functions include: compiling pre-inspection information from instruction manuals or specifications, and data resulting from inspections and tests; comparing product dimensions and quality to specified standards; working to close tolerances when testing experimental tires or electrical rubber-goods; and handling materials, parts and products during quality-control work. Work activities include: examining items for defects and to determine repairs required; measuring articles to ensure conformance to specifications; marking or cutting out defective areas; testing, counting and weighing items; sorting, grading, bundling, stacking or packing products; recording test results; and writing reports of defects.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8576-110	EXPERIMENTAL-TIRE INSPECTOR (rubber)	3	6	8576-126	LINOLEUM INSPECTOR (linoleum prod.)	3	4
8576-114	ELECTRICAL-RUBBER-GOODS TESTER (elec. power)	3	5	8576-130	LINOLEUM-LINE INSPECTOR (linoleum prod.)	3	4
8576-118	INSPECTOR, PLASTIC AND RUBBER PRODUCTS (plastic prod.; rubber)	3	5	8576-134	TIRE CLASSIFIER (rubber)	3	4
8576-122	GREEN-TIRE INSPECTOR (rubber)	3	5	8576-146	PHONOGRAPH-RECORD TESTER (misc. prod.; fab., n.e.c.)	3	3
				8576-150	TIRE INSPECTOR (rubber)	2	3

B

		GED	SVP			GED	SVP
8576-138	TIRE-RETREADING INSPECTOR (rubber)	3	4	8576-170	INSPECTOR-TRIMMER, MOULDED PLASTIC AND RUBBER (plastic prod.; rubber)	2	2
8576-142	FOAM-RUBBER-GOODS INSPECTOR (plastic prod.; rubber)	3	3	8576-174	MATTING INSPECTOR (rubber)	2	2
8576-154	PICKER, BEAM PRESS (rubber)	2	2	8576-178	RUBBER-FOOTWEAR INSPECTOR AND TESTER (plastic prod.; rubber)	2	2
8576-158	FORCED-VARIATION TESTER (rubber)	2	2	8576-182	GRADER, RUBBER BALLOONS (rubber)	2	2
8576-162	HOSE INSPECTOR AND TESTER (rubber)	2	2	8576-186	TIRE-BALANCE INSPECTOR (rubber)	2	2
8576-166	INNER-TUBE INSPECTOR (rubber)	2	2				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	4	4	4	<u>3</u>	<u>4</u>	<u>3</u>	3	<u>3</u>	5	5	L-M 347	I	3	6-3	193	0Y3
		3	<u>3</u>				<u>4</u>	4	4	4	<u>3</u>						
B	4	4	4	4	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>4</u>	5	5	L-M 47	I	2	3-2	139	23Y
			5						<u>3</u>	4	<u>3</u>						

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to acquire knowledge of company specifications and standards, and to understand and apply quality-control procedures and techniques;
- form perception to discern faults in materials, parts or products to indicate repairs required or to reject defective products;
- eye-hand-finger co-ordination and manual dexterity to inspect products in process, to mark defective areas while product is moving through machine or on inspection table, to use a variety of measuring and test equipment, and to cut out defective sections;
- colour discrimination to perceive slight differences in colours and shades for 8576-126 LINOLEUM INSPECTOR, 8576-130 LINOLEUM-LINE INSPECTOR, 8576-162 HOSE INSPECTOR AND TESTER, 8576-174 MATTING INSPECTOR AND 8576-178 RUBBER-FOOTWEAR INSPECTOR AND TESTER;
- strength to perform medium work involving the lifting and carrying of items and materials weighing up to fifty pounds;

- near visual acuity and accommodation for activities such as plotting and drawing graphs from test results, observing apparatus for electrical flash-over, using and reading measuring and testing devices, and observing products to detect minute imperfections such as ply separations, scratches and pattern defects.

Workers in Cluster A also require:

- numerical ability to quickly and accurately perform arithmetic operations when counting bead wires and plies in cross section of tires, and when measuring defects and assessing effects of wear or other tests;
- clerical ability to record data properly, and to avoid perceptual errors when reading measuring instruments and specifications.

Workers in Cluster B also require:

- finger dexterity to manipulate small objects such as footwear parts, plastic shotgun shells and rubber balloons, and to adjust machine controls.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to twelve years of general education;
- two months to two years of combined on-the-job training and

related experience in assembling, moulding and finishing rubber and plastic products, depending on the complexity of the occupation.

B

- six to eight years of general education;
- on-the-job training ranging from one to six months, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to occupations requiring higher skills within their individual cluster, or with additional training, from occupations in Cluster B to A. Those with supervisory potential may advance to 8570-118 FOREMAN, INSPECTING RUBBER, PLASTIC AND RELATED MATERIALS PRODUCTS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in both clusters may transfer to occupations requiring similar basic skills within their individual cluster. With limited additional training, transfer may also be possible to appropriate occupations in Chapter 8176, INSPECTING, TESTING AND SAMPLING OCCUPATIONS: CHEMICAL, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING; for example, 8176-122 ASPHALT-ROOFING-MATERIALS INSPECTOR; 8176-134 RUBBER TESTER; and 8176-170 INSPECTOR, VINYL FABRICS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques;

Temperaments

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

Additionally,

for Cluster A:

- the evaluation of information against measurable or verifiable criteria.

for Cluster B:

- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING AND REPAIRING RUBBER, PLASTIC AND RELATED PRODUCTS

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in the fabrication, assembly and repair of a wide variety of products made from rubber, plastic, fibreglass and related materials. Worker functions include: feeding parts and materials into machines and offbearing finished products; and handling cloths, spray guns, hand tools and other items while performing routine tasks. Work activities include: placing materials on mandrels or in moulds or fixtures; stripping moulded products such as toys or shoes from moulds or lasts; cutting, trimming, cementing and laminating materials or parts of articles; and cleaning and waxing moulds.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8578-110	MOULDING-MACHINE OFFBEARER (plastic prod.)	1	2	8578-150	TIRE-VALVE WORKER (rubber)	1	2
8578-112	BALLOON-FORM STRIPPER AND CLEANER (rubber)	1	2	8578-154	MOULD PREPARER (plastic prod.)	1	2
8578-114	BIAS-MACHINE-OPERATOR HELPER (rubber)	1	2	8578-158	EYEGLOSS-FRAME TRIMMER (scient. & ind. equip., n.e.c.)	1	2
8578-118	FOOTWEAR-MOULD-PRESS FEEDER (rubber)	1	2	8578-162	RUBBER-FOOTWEAR SUB-ASSEMBLER (rubber)	1	2
8578-122	HOSE LOADER AND STRIPPER (rubber)	1	2	8578-166	BELT LAMINATOR, HAND (plastic prod.; rubber)	1	2
8578-126	MOULDED-PRODUCTS FINISHER (plastic prod.; rubber)	1	2	8578-170	EYEGLOSS-PAD CEMENTER (scient. & ind. equip., n.e.c.)	1	2
8578-130	MOULD FILLER (plastic prod.; rubber)	1	2	8578-174	TIRE BAND WRAPPER (rubber)	1	2
8578-138	RUBBER-SOLE BUFFER, AUTOMATIC (rubber)	1	2	8578-178	STRING-TOP SEALER (plastic prod.)	1	1
8578-142	STRIPPER, MOULDED PRODUCTS (plastic prod.; rubber)	1	2	8578-182	AIR-BAG EXTRACTOR (rubber)	1	1
8578-146	TIRE CLEANER AND PAINTER (rubber)	1	2	8578-186	CEMENTER, HAND (plastic prod.; rubber)	1	1
				8578-190	OPENING-MACHINE FEEDER (rubber)	1	1
				8578-194	TREAD-SPLICE PRESSER (rubber)	1	1
				8578-198	SOLID-TIRE MOUNTER (rubber)	1	1

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	5	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5		L-M 4	I 7	1	2-1	13	23
									4								

APTITUDES AND CAPACITIES

Labourers and elemental workers in this chapter require:

- learning ability to understand and follow simple instructions and procedures related to assembly, fabrication or repair of products;

- eye-hand-finger co-ordination and manual dexterity to handle materials, parts, assemblies and tools when loading, unloading, positioning, sorting and cleaning materials;
- capacity to work inside while exposed to fumes from solvents, odours from rubber or plastic materials, and dust from trimming and sanding units.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specified educational level, but eight years of schooling is preferred;

- on-the-job training, ranging from a short demonstration for some occupations to one month for others.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Many of these occupations are considered entry jobs, and advancement is normally to more highly skilled occupations in Minor Group 857, **FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS**; for example, 8578-162 **RUBBER-FOOTWEAR SUB-ASSEMBLER** may advance to 8571-130 **RUBBER-FOOTWEAR ASSEMBLER**; 8578-110 **MOULDING-MACHINE OFFBEARER** may advance to 8573-178 **COMPRESSION-MOULDING-MACHINE TENDER** or 8573-194 **INJECTION-MOULDING-MACHINE TENDER**.

Transfer

Transfer may be to occupations requiring similar skills within this chapter, or to other occupations in labouring and elemental work in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- activities which are routine, concrete and organized.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with fabricating, assembling and repairing a variety of rubber, plastic and laminated fibreglass products.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
8579-110	RUBBERIZING MECHANIC (mech. equip., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I	3	6	91	Y0
8579-114	ROLLER REPAIRMAN (plastic prod.; rubber)	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M 4	I 7	3	6	91	Y0
8579-118	WET-SUIT MAKER (garment & fabric)	<u>3</u>	4	<u>4</u>	3	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	L 47	I	3	5	190	Y09
8579-122	FOAM-PLASTIC-SPRAYING MACHINE OPERATOR (plastic prod.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	4	5	L 457	I 7	3	5	91	Y0
8579-126	HOSE MAKER, HAND (rubber)	3	4	4	3	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	4	5	M 4	I 6	3	5	91	Y0
8579-130	LATEX-RIBBON-MACHINE OPERATOR (rubber)	3	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	4	5	L 47	I 5	3	5	91	Y0
8579-134	PLASTICS FABRICATOR (air & space- craft; plastic prod.)	3	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 47	I 7	3	5	91	Y0
8579-138	RUBBER-LINING INSTALLER (rubber)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 347	I 7	3	5	91	Y0
8579-142	FUEL-TANK FINISHER AND REPAIRER (rubber)	3	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 347	I 7	3	4	910	Y0
8579-146	DE-ICER ASSEMBLER, PNEUMATIC (rubber)	3	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 4	I 7	3	4	91	2Y
8579-150	FIBREGLASS LAMINATOR (electronic equip.; plastic prod.; ship & boat bldg.)	3	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 34	I 7	3	4	91	2Y
8579-154	FUEL-TANK BUILDER (rubber)	3	4	4	4	<u>3</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	H 347	I 7	3	4	910	Y0
8579-158	ZIPPER-FORMING-MACHINE TENDER (plastic prod.)	4	4	4	<u>4</u>	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I 6	3	4	319	2Y
8579-162	CURED-TIRE REPAIRMAN (rubber)	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 7	3	3	913	2Y
8579-166	EXPANSION-JOINT BUILDER (rubber)	4	4	4	4	4	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	H 4	I	3	3	913	2Y
8579-170	NEOPRENE SPRAYER (plastic prod.)	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	H 4	I 7	3	3	913	2Y
8579-174	RUBBER-FOOTWEAR MAKER, HAND (rubber)	4	4	5	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5	L 47	I 7	2	4	319	23Y
8579-178	RUBBER-FOOTWEAR REPAIRER (rubber)	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L 47	I 7	2	4	319	23Y
8579-182	TIRE BUILDER (rubber)	4	4	4	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	4	5	H 4	I 5	3	3	319	2Y
8579-186	UNCURED-TIRE REPAIRMAN (rubber)	4	4	4	4	4	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 7	2	4	319	23Y
8579-190	AIRCRAFT-TIRE-TUBE BUILDER (rubber)	4	4	5	4	4	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	2	3	319	23Y
8579-194	LASTER, RUBBER FOOTWEAR (rubber)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	L 4	I	2	3	319	23Y
8579-198	LEAD-STRIPPING-MACHINE OPERATOR (rubber; wire prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	<u>5</u>	H 4	I 7	2	3	319	23Y
8579-202	PADDED-DASHBOARD MAKER (plastic prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 4	I 7	2	3	319	23Y
8579-206	PLASTICS REPAIRMAN (plastic prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	4	L 47	I	2	3	319	2Y
8579-210	TIRE REPAIRMAN (motor trans.)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	4	5	M 34	I	2	3	319	2Y
8579-214	AIR-BAG BUILDER (rubber)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	M 4	I	2	3	319	2Y
8579-216	CENTRIFUGAL CASTER (chem., n.e.c.; plastic prod.)	4	4	4	4	4	5	<u>4</u>	4	<u>3</u>	4	4	M 4	I 57	2	3	319	23Y
8579-218	TIRE BUFFER (rubber)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	H 47	I 57	2	3	319	20Y
8579-222	BEAD FINISHER (rubber)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 4	I 5	2	2	319	23Y
8579-226	BED LASTER (rubber)	4	4	5	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	4	5	L 4	I 5	2	2	319	23Y

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8579-230	DE-ICER-KIT PREPARER (rubber)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	M 4	I	2	2	319	23Y
8579-234	FOAM-CUSHION REPAIRER (plastic prod.; rubber)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 4	I 7	2	2	319	23Y
8579-238	HOSE CURER, OPEN STEAM (rubber)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 47	I 5	2	2	319	23Y
8579-242	MOULD CLEANER (rubber)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	H 34	I 57	2	2	319	23Y
8579-246	NET APPLICATOR (plastic prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 4	I 57	2	2	319	23Y
8579-250	RUBBER-FOOTWEAR MOUNTER (plastic prod.; rubber)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	L 4	I	2	2	319	23Y
8579-254	RUBBER-GOODS REPAIRMAN (rubber)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 4	I 7	2	2	319	23Y
8579-258	SOLID-TIRE BUILDER (rubber)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	H 4	I 7	2	2	319	23Y
8579-262	LINER-REROLL MAN (rubber)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>4</u>	4	5	H 4	I	2	2	319	23Y
8579-266	ATOMIZER-CAP-MACHINE TENDER (plastic prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	L 4	I	2	2	319	23Y
8579-270	BACK-STRIP-MACHINE TENDER (rubber)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>4</u>	4	4	L 4	I	2	2	319	23Y
8579-274	BALLON LEACHER AND CURER (rubber)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 4	I	2	2	319	23Y
8579-278	CHAFER BUILDER (rubber)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 4	I	2	2	319	23Y
8579-282	GOLF-BALL-COVER TREATER (sport. & toy)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	M 4	I 7	2	2	319	23Y
8579-286	HOSE CUTTER AND BRANDER, MACHINE (rubber)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	4	M 34	I	2	2	319	23Y
8579-290	TIRE-BAGGING-MACHINE TENDER (rubber)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	H 34	I 5	2	2	319	23Y
8579-294	HOSE-COUPPLING ASSEMBLER (plastic prod.; rubber)	4	4	5	4	4	5	<u>3</u>	4	<u>3</u>	5	5	L 4	I	2	2	31	23Y
8579-298	INNER-TUBE INSERTER (rubber)	4	4	5	4	4	5	<u>3</u>	<u>4</u>	<u>4</u>	5	5	H 4	I 7	2	2	31	23
8579-302	PREPARATION MAN, LEAD PRESS (rubber)	4	4	5	4	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>4</u>	5	5	M 34	I	2	2	31	23

MOTOR-VEHICLE MECHANICS AND REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with repairing and servicing automobiles, trucks, buses, motorcycles, snowmobiles, industrial trucks and other motor vehicles. Worker functions include: analyzing data obtained from test and diagnostic equipment to isolate or locate faults; manipulating and operating hand and power tools to dismantle, adjust, repair and assemble vehicles and accessories; working to close tolerances while repairing and adjusting carburetors, reboring cylinders and aligning steering mechanisms; and comparing vehicle parts or assemblies to determine need of repair or replacement, and assessing performance in accordance with acceptable standards. Work activities include: servicing new vehicles on delivery to dealer; replacing safety glass windows and windshields; salvaging usable parts from wrecked vehicles; steam-cleaning engines, bodies and vehicle parts; and installing heaters, radios, seat covers and other accessories.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8581-110	MOTOR-VEHICLE MECHANIC (motor vehicle)	4	7	8581-142	BODY REPAIRMAN (motor vehicle)	3	7
8581-114	ENGINE REPAIRMAN (motor vehicle)	4	7	8581-146	AUTOMOTIVE-AIR- CONDITIONING MECHANIC (motor vehicle)	3	6
8581-118	INDUSTRIAL-TRUCK MECHANIC (mech. equip., n.e.c.)	4	7	8581-150	CARBURETOR REPAIRMAN (motor vehicle)	3	6
8581-122	TRANSMISSION MECHANIC (motor vehicle)	4	7	8581-154	FRONT-END MAN (motor vehicle)	3	6
8581-126	TROLLEY-COACH MECHANIC (motor vehicle)	4	7	8581-158	MOTORCYCLE REPAIRMAN (motor vehicle)	3	6
8581-134	TUNE-UP MAN (motor vehicle)	4	6	8581-162	NEW-CAR SERVICEMAN (motor vehicle)	3	6
8581-138	MECHANICAL-UNIT REPAIRMAN (motor vehicle)	4	6	8581-166	AUTOMOTIVE-BRAKE REPAIRMAN (motor vehicle)	3	6
8581-140	TRUCK-TRAILER REPAIRMAN (motor vehicle)	4	6	8581-174	SNOWMOBILE REPAIRMAN (motor vehicle)	3	5

B

		GED	SVP			GED	SVP
8581-170	AUTOMOTIVE-RADIATOR REPAIRMAN (motor vehicle)	3	6	8581-190	SQUEAK, RATTLE AND LEAK MAN (motor vehicle)	2	4
8581-178	USED-CAR RENOVATOR (motor vehicle)	3	5	8581-194	AUTOMOBILE-ACCESSORIES INSTALLER (motor vehicle)	2	3
8581-182	AUTOMOBILE WRECKER (motor vehicle)	3	4	8581-198	MOTOR-VEHICLE-MECHANIC HELPER (motor vehicle)	2	3
8581-184	GLASS INSTALLER (motor vehicle)	3	4	8581-202	SPRING SERVICEMAN (motor vehicle)	2	2
8581-186	MUFFLER INSTALLER (motor vehicle)	2	4	8581-206	BODY-REPAIRMAN HELPER (motor vehicle)	2	2
				8581-210	STEAM CLEANER (motor vehicle)	2	2

N.B. Occupation 8581-130, SHOP ESTIMATOR (motor vehicle) has been transferred, for Volume II purposes, to Chapter 8586, INSPECTING AND TESTING OCCUPATIONS, EQUIPMENT REPAIR, N.E.C.

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M-H 347	I 567	4-3	7-6	190	Y01
		4	4	4		5					5						
B	4	4	4	<u>4</u>	<u>3</u>	5	<u>3</u>	4	<u>3</u>	5	5	M-H 347	I-B 56	3-2	6-2	193	2Y0
	3		5		<u>4</u>	4		<u>3</u>			4		I 456			13	2Y3

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand motor-vehicle repair-manual instructions and specifications and underlying principles of automotive vehicle construction and operation, and to use this knowledge to repair and service motor vehicles;
- spatial perception to understand and visualize relationships and arrangement of parts in automotive mechanisms and assemblies;
- form perception to detect faults in parts when assembling and adjusting motor-vehicle electrical and mechanical components and to observe and compare slight differences in shapes and dimensions;
- eye-hand co-ordination and finger dexterity to handle small objects, to use hand tools to assemble and adjust parts and to use precision equipment to test component parts or vehicle performances;
- manual dexterity to move the hands easily and skilfully when placing parts, making adjustments and tightening screws and nuts;

- strength to perform medium to heavy work requiring frequent lifting of assemblies weighing up to fifty pounds, and torquing nuts and bolts to specified foot-pounds;
- agility to work under or around vehicles in awkward positions such as lying down, stooping, kneeling and crouching while reaching for and handling parts, assemblies and tools;
- near visual acuity and depth perception when assembling or adjusting mechanical parts and assemblies;
- capacity to work, usually inside, while exposed to loud, intermittent noises from pneumatic wrenches, hammering and accelerating engines;
- adaptability to a variety of physical hazards such as exposure to fumes and dusts, grease and dirt, and working in close proximity to moving mechanical parts.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to ten years of general education;
- for most occupations, a four to five-year apprenticeship program which includes periods of full-time courses at a trade school; or

- a two to three-years approved course of studies relating to the trade, and a shortened apprenticeship period;
- completion of examination and licencing requirements.
- for other occupations, two to three years of on-the-job training.

B

- seven to nine years of general education;
- one month to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in this chapter may advance to higher skilled occupations within their individual cluster or from Cluster B to A. Those with supervisory potential may advance to 8580-122 FOREMAN: MOTOR VEHICLE MECHANICS AND REPAIRMEN. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Experienced workers in this chapter who acquire knowledge of business practices may become self-employed.

Transfer

Workers in this chapter may transfer to appropriate occupations requiring similar skills in Unit Group 8584, INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY MECHANICS AND REPAIRMEN, or 8589, OTHER MECHANICS AND REPAIRMEN, N.E.C. Apprentices who are unable to complete their training may transfer to occupations such as 5145-110 SERVICE-STATION ATTENDANT.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A**Interests**

- dealing with things and objects of a mechanical nature;
- non-social work, carried on in relation to processes, machines and techniques,
- activities leading to satisfaction from tangible results.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria to arrive at decisions;
- a variety of duties often characterized by frequent change.

B

Interests

- things and objects of a mechanical nature;
- routine, concrete and organized work.

Temperaments

- repletive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

AIRCRAFT MECHANICS AND REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with servicing and repairing aircraft, airframe components, engines, accessories and related equipment. Work functions include: analyzing test data to evaluate the condition of engines, aircraft and equipment; compiling information from measurements and performance tests; comparing the state of items such as fuel and oil levels and tire pressures, and the condition and cleanliness of mechanical equipment to required standards; working to close tolerances and using precision-measuring instruments and testing equipment to ensure adjustments and repairs are made according to manufacturers' specifications and standards; and manipulating hand and power tools to repair or replace defective parts. Work activities include: inspecting airframe components for defects and testing controls, engines and accessories; repairing, replacing or adjusting faulty units; repairing fabric surface coverings; and replenishing supplies of fuel, oil and other consumable materials.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8582-110	AIRCRAFT MECHANIC (air & space-craft)	4	7	8582-114	AIRCRAFT-ACCESSORIES MECHANIC (air & space-craft)	4	6

B

		GED	SVP
8582-118	DOPE-AND-FABRIC MAN (air & space-craft)	3	6

C

		GED	SVP			GED	SVP
8582-122	AIRCRAFT-MECHANIC HELPER (air & space-craft)	3	5	8582-126	AIRCRAFT DE-ICER REPAIRMAN (mech. equip., n.e.c.)	3	4

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>2</u>	4	3		M 2347	B 56	4	7-6	910	Y01
										5	4							
B	3	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4		M 347	I 67	3	6	91	Y0
C	3	4	4	<u>3</u>	4	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4		M 2347	I-B 56	3	5-4	193	2Y
				4				4		5	5							

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand the principles governing aircraft construction and operation, and to apply the appropriate techniques of servicing, repairing and overhauling aircraft engines and accessories;
- spatial perception to visualize the arrangement and relationships of parts and assemblies represented in diagrams and manufacturers' manuals in order to disassemble, repair and reassemble engines and accessories;
- form perception to examine aircraft parts for signs of wear and other defects, and to read precision measuring equipment accurately;
- eye-hand-finger co-ordination to use tools to dismantle, repair and install equipment and to make adjustments requiring a high degree of accuracy;
- finger dexterity to precisely place and manipulate small parts when repairing aircraft engines and assembling aircraft accessories;
- manual dexterity to adjust, assemble, align, and install aircraft parts and assemblies, using hand and power tools;
- physical capacity to lift up to fifty pounds and to handle and carry aircraft equipment weighing up to twenty pounds;
- capacity to climb and balance on work platforms, to work in awkward positions such as stooping, kneeling and crouching, and reach into places of limited access in aircraft structures;
- near visual acuity to do fine, exacting work and colour vision to recognize colour coded parts;
- adaptability to exposure to fumes from aircraft fuel and to intense noise from engines;
- capacity to work outside in all weather conditions and while exposed to hazards such as propellers or jet engine intake and exhausts is required by Aircraft Mechanics.

B

- learning ability to understand and apply the techniques for installation and repair of fabric-covered aircraft structures;

- spatial perception to visualize completed aircraft structures in order to cut and correctly position pieces of fabric coverings;
- form perception to examine work for irregularities in surface finish when stretching fabric into place and smoothing wrinkles, edges and seams;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to cut fabric using hand and electric shears, to stitch seams using upholster's needles and sewing machine, to stretch fabric and to fasten fabric to structure;
- strength to lift and position aircraft components weighing up to fifty pounds;
- ability to stoop, crouch and kneel when installing and repairing fabric;
- near visual acuity to accurately cut fabric coverings to size;
- adaptability to working conditions where dope fumes are prevalent.

C

- learning ability to understand and apply techniques used in servicing or repairing aircraft and aircraft equipment;
- spatial perception to remove and correctly replace parts on aircraft;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to use mechanic's hand tools, knife, buffer and portable vulcanizing equipment;
- strength to lift parts weighing up to fifty pounds and frequently carry items weighing twenty pounds;
- colour vision to distinguish colour coded piping when installing parts;

Additionally, for 8582-122 AIRCRAFT-MECHANIC HELPER:

- capacity to climb and balance while working on aircraft and to stoop or crouch and reach into confined work areas;
- adaptability to outside work while subjected to high noise levels and adjacent hazards such as propellers and jet engine intakes and exhausts.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- twelve years of general education;
- a four-year apprenticeship program which normally includes periods of study at a technical institute, or a similar form of on-the-job training.

B

- ten years of general education;
- one year or more of on-the-job training and related experience.

C

- ten years of general education;
- three months to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in B and C may advance to occupations in Cluster A. Experienced workers with supervisory potential may also advance to 8580-110 FOREMAN: AIRCRAFT MECHANICS AND REPAIRMEN. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Advancement for some workers may also be to appropriate occupations in Chapter 8586, INSPECTING AND TESTING OCCUPATIONS, EQUIPMENT REPAIR, N.E.C.

Transfer

Workers in this chapter may transfer to occupations requiring similar skills, in Chapter 8515, AIRCRAFT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster A:

- work leading to satisfaction from tangible results.

Additionally, for Cluster C:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change.

B

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

RAIL TRANSPORT EQUIPMENT MECHANICS AND REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with repairing and servicing railway rolling stock, street and subway cars and related equipment. Worker functions include: manipulating hand and power tools and pipe-fitting and welding equipment to repair or rebuild mechanical or structural components; compiling data obtained by examination of cars, components and equipment to determine defects and assure overall conformance to standards and specifications; comparing parts and components to determine extent of wear and acceptability for use; and working to close tolerances when taking measurements or testing and adjusting units such as compressors, valves, bearings, traction motors, controls and brake assemblies. Work activities include: gauging the alignment of car sides; hoisting or jacking parts into position; replacing piping; cutting out and straightening damaged areas; welding replacement sections into position; and replacing defective parts in brake units, wheels, couplers and other mechanical assemblies.

LIST OF OCCUPATIONAL TITLES

A							
		GED	SVP				
				GED	SVP		
8583-110	CARMAN (rail. rolling stock)	4	7	8583-118	AIR-VALVE REPAIRMAN (rail. rolling stock)	3	5
8583-114	STREETCAR AND SUBWAY-CAR MECHANIC (rail. rolling stock)	4	7				

B					
		GED	SVP		
8583-122	CARMAN HELPER (rail. rolling stock)	3	4		

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	L-H 347	I-B 57	4-3	7-5	19	Y01
				<u>4</u>		5											
B	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	4	5	H 3456	B 56	3	4	139	2Y

All workers in this chapter also require:

- physical capacity to perform light to heavy work, and to reach for and handle a variety of tools, parts and materials;
- agility to stoop, kneel, crouch or crawl to gain access to, and work in awkward positions;

- ability to speak clearly and receive information accurately for 8583-110 CARMAN and 8583-122 CARMAN HELPER;
- adaptability to some outside work activities, and to high noise levels from pneumatic hammering and riveting equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;

- for 8583-110 CARMAN and 8583-114 STREETCAR AND SUBWAY-CAR MECHANIC, a three to four-year apprenticeship program or similar form of on-the-job training.
- for other occupations, three months to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, Carmen Helpers may advance to occupations requiring higher skills in Cluster A. Experienced workers in Cluster A may advance to 8580-134 FOREMAN: RAIL TRANSPORT EQUIPMENT REPAIRMEN. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Experienced workers in Cluster A may transfer to 8586-142 RAILWAY-CAR INSPECTOR or 8586-150 WHEEL-AND-AXLE INSPECTOR. With limited additional training, some workers may also transfer to occupations requiring similar basic skills in Chapters 8584, INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY MECHANICS AND REPAIRMEN and 9533, STATIONARY ENGINE AND AUXILIARY EQUIPMENT OPERATING AND MAINTAINING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects of a mechanical nature;
- non-social work, carried on in relation to machines and techniques.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards as reflected in fitting mechanical parts and aligning structural components;
- the evaluation of information against measurable criteria, such as checking dimensions to ensure conformity to specifications;
- a variety of duties often characterized by frequent change.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY MECHANICS AND REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with repairing and servicing a wide variety of industrial machinery, farm machinery, material handling equipment, construction equipment and associated engines. Worker functions include: analyzing data concerning the condition and operating characteristics of equipment to determine the extent of repairs required; working to close tolerances when replacing and aligning parts or adjusting machinery; and manipulating hand and power tools during servicing or repair work. Work activities include: starting, observing and listening to equipment in operation to diagnose malfunctions; dismantling machines to remove damaged or worn parts; machining and fitting parts as required and reassembling units; installing machinery and supporting structures in industrial establishments; testing newly installed or repaired equipment; and making necessary adjustments.

LIST OF OCCUPATIONAL TITLES

		A					
		GED	SVP				
8584-110	PRINTING-MACHINERY MECHANIC (mech. equip., n.e.c.)	4	8	8584-170	MAINTENANCE MECHANIC, COMPRESSED-GAS PLANT (mech. equip., n.e.c.)	4	6
8584-114	LOOM FIXER (textile)	4	7				
8584-118	MACHINE FIXER, TEXTILE (textile)	4	7	8584-174	MINING-MACHINERY MECHANIC (mech. equip., n.e.c.)	4	6
8584-378	CONSTRUCTION-EQUIPMENT MECHANIC (mech. equip., n.e.c.)	4	7	8584-178	OIL-TOOL-MAINTENANCE MAN (mech. equip., n.e.c.; oil & nat. gas)	4	6
8584-382	DIESEL MECHANIC (mech. equip., n.e.c.)	4	7	8584-162	PACKAGING-MACHINE MECHANIC (mech. equip., n.e.c.)	4	6
8584-122	MILLWRIGHT (mech. equip., n.e.c.)	4	7	8584-182	POWDER-LINE REPAIRMAN (explosives; mech. equip., n.e.c.)	4	6
8584-126	ORE-PROCESSING-EQUIPMENT REPAIRMAN (mech. equip., n.e.c.)	4	7	8584-166	QUILTING-MACHINE FIXER (mech. equip., n.e.c.)	4	6
8584-130	POWERHOUSE REPAIRMAN (mech. equip., n.e.c.)	4	7	8584-158	TANNERY-MACHINERY REPAIRMAN (mech. equip., n.e.c.)	4	6
8584-326	DAIRY-EQUIPMENT REPAIRMAN (mech. equip., n.e.c.)	4	7	8584-186	TREATMENT-PLANT MECHANIC (mech. equip., n.e.c.)	4	6
8584-330	FARM-EQUIPMENT MECHANIC (mech. equip., n.e.c.)	4	7	8584-190	WELDING-EQUIPMENT REPAIRMAN (mech. equip., n.e.c.)	3	7
8584-134	METALWORKING-MACHINERY MECHANIC (mech. equip., n.e.c.)	4	7	8584-194	OVEN-EQUIPMENT REPAIRMAN (mech. equip., n.e.c.)	3	6
8584-350	MINE-HOIST REPAIRMAN (mech. equip., n.e.c.)	4	7	8584-198	SEWING-MACHINE MECHANIC (mech. equip., n.e.c.)	3	6
8584-138	CHEMICAL-PROCESS-EQUIPMENT MECHANIC (mech. equip., n.e.c.)	3	7	8584-202	AMMUNITION-ASSEMBLING- MACHINE ADJUSTER (explosives; mech. equip., n.e.c.)	3	6
8584-142	BAKERY-MACHINERY MECHANIC (mech. equip., n.e.c.)	4	6	8584-206	CARTON-FORMING-MACHINE REPAIRMAN (mech. equip., n.e.c.)	3	6
8584-146	BOILERHOUSE REPAIRMAN (mech. equip., n.e.c.)	4	6	8584-358	CONVEYOR REPAIRMAN (mech. equip., n.e.c.)	3	6
8584-354	CRANE REPAIRMAN (mech. equip., n.e.c.)	3	7	8584-210	FIBREGLASS-FORMING-MACHINE REPAIRMAN (mech. equip., n.e.c.)	3	6
8584-150	FORGE-SHOP-MACHINERY REPAIRMAN (mech. equip., n.e.c.)	4	6	8584-214	LAUNDRY-MACHINE MECHANIC (mech. equip., n.e.c.)	3	6
8584-154	GUM-WRAPPING-MACHINE MECHANIC (mech. equip., n.e.c.)	4	6				

		GED	SVP			GED	SVP
8584-218	RECORD-PROCESS-EQUIPMENT REPAIRMAN (mech. equip., n.e.c.)	3	6	8584-226	TOBACCO-MACHINE ADJUSTER (mech. equip., n.e.c.)	3	6
8584-222	SEAMER-MACHINE REPAIRMAN (mech. equip., n.e.c.)	3	6	8584-230	CARD GRINDER (mech. equip., n.e.c.)	3	6
				8584-234	SHEARING-MACHINE FIXER (textile)	3	6

B

		GED	SVP			GED	SVP
8584-238	MACHINE-CLOTHING MAN (pulp & paper)	3	6	8584-270	CIGARETTE-MACHINE-DRUM REPAIRMAN (mech. equip., n.e.c.)	2	4
8584-242	ROLL BUILDER (mech. equip., n.e.c.)	3	6	8584-274	LINERMAN (mech. equip., n.e.c.)	2	4
8584-246	CHEMICAL-PROCESS-EQUIPMENT-MECHANIC HELPER (mech. equip., n.e.c.)	3	5	8584-278	WIRE REPAIRMAN (mech. equip., n.e.c.)	3	3
8584-386	DIESEL-MECHANIC HELPER (mech. equip., n.e.c.)	3	5	8584-394	CONSTRUCTION-EQUIPMENT-MECHANIC HELPER (mech. equip., n.e.c.)	2	3
8584-248	STONE-SAW SETTER (cement, stone & clay)	3	5	8584-282	FLYER REPAIRMAN (mech. equip., n.e.c.)	2	3
8584-390	CRAWLER-TRACK REPAIRMAN (mech. equip., n.e.c.)	3	4	8584-286	MILLWRIGHT HELPER (mech. equip., n.e.c.)	2	3
8584-250	LOOM-REED MAN (textile)	3	4	8584-290	ORE-PROCESSING-EQUIPMENT-REPAIRMAN HELPER (mech. equip., n.e.c.)	2	3
8584-254	POWERHOUSE-REPAIRMAN HELPER (mech. equip., n.e.c.)	3	4	8584-294	SHAKER REPAIRMAN (feed & flour mill.)	2	3
8584-258	ROLLER COVERER (mech. equip., n.e.c.)	3	4	8584-298	SIPHONING-HEAD CONDITIONER (non-ferrous metal)	2	3
8584-262	SEWING-MACHINE-MECHANIC HELPER (mech. equip., n.e.c.)	2	5	8584-398	CRAWLER-TRACK-REPAIRMAN HELPER (mech. equip., n.e.c.)	2	3
8584-266	SPINNERET CLEANER (syn. fibres)	2	4	8584-302	ANODE MAN (mech. equip., n.e.c.)	2	2
				8584-306	SIEVE REPAIRMAN (mech. equip., n.e.c.)	2	2

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M-H 23467	I-B 567	4-3	8-6	190	Y01
		4	3			5				5							
B	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M-H 2347	I 567	3-2	6-2	139	2Y
	3		5		<u>3</u>	4	<u>4</u>	<u>3</u>		5							2Y3

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply mechanical repair procedures and principles to ensure the satisfactory functioning of machinery and reasoning ability to diagnose faults and take appropriate corrective actions;
- spatial perception to visualize from drawings or sketches, sequence of parts assembly and relative positions of machinery components;
- form perception to detect defects and excessive wear in machinery and to see slight differences in dimensions and shape of component parts;
- eye-hand-finger co-ordination and finger and manual dexterity to

accurately assemble parts, to use a variety of hand and power tools and machine-tools, and to make fine adjustments of control devices.

B

- learning ability to understand and apply service and repair manual instructions, and to use hand and power tools and test equipment when repairing machinery;
- form perception to make visual comparisons in shape and general condition when assessing parts wear or defects;
- eye-hand-finger co-ordination and finger and manual dexterity to dismantle, clean, repair, assemble and adjust, or assist in carrying out these tasks for a variety of machinery, and performing simple functional tests.

CHAPTER 8584

All workers in these clusters also require:

- ability to climb, balance, stoop, kneel and crouch while repairing machinery;
- capacity to reach, handle, finger and feel when repairing and testing equipment;
- near visual acuity to examine machinery for signs of wear and

- malfunctioning, to make fine adjustments and to use precision-measuring equipment;
- capacity to work sometimes outside in adverse weather conditions for some occupations;
- capacity to work while exposed to noises from production machinery, generators, power tools, conveying or construction equipment;
- adaptability to unpleasant atmospheric conditions such as diesel and welding fumes and dust.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten years of general education;
- for 8584-122 MILLWRIGHT, 8584-378 CONSTRUCTION-EQUIPMENT MECHANIC and 8584-382 DIESEL MECHANIC, a four to five-year apprenticeship program, usually provincially regulated, and in most provinces subject to licensing requirements.

- for other occupations, an apprenticeship program or similar form of on-the-job training, lasting from two to four years, depending on the complexity of the occupation.

B

- nine to ten years of general education;
- on-the-job training ranging from two months to two years, depending on the occupations.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and additional training, advancement possibilities for workers in this chapter may be to other occupations requiring higher skills within their individual cluster or from Cluster B to A. Those with supervisory potential may advance to 8580-114 FOREMAN: INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY MECHANICS AND REPAIRMENT. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to occupations requiring similar skills within the chapter or, with limited additional training, to appropriate occupations throughout Minor Group 858, MECHANICS AND REPAIRMEN, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Additionally,

for Cluster A:

- work leading to satisfaction from tangible results.

for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change.

B

- repetitive or short cycle operations, carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

BUSINESS AND COMMERCIAL MACHINE MECHANICS AND REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with repairing and servicing typewriters and calculating, accounting, card-punching, duplicating, adding and other business and commercial machines. Worker functions include: analyzing data obtained by examining machines and their components to determine nature of malfunctions; and working to close tolerances to make repairs and adjustments. Work activities include: inspecting, dismantling, testing and reassembling equipment using hand and power tools, precision instruments and test equipment; repairing, fabricating or replacing parts; cleaning and oiling mechanisms; and making modifications in accordance with diagrams and specifications.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8585-110	MAIL-PROCESSING-EQUIPMENT MECHANIC (mech. equip., n.e.c.)	4	7	8585-122	SERVICEMAN, DICTATING AND TRANSCRIBING MACHINES (mech. equip., n.e.c.)	4	6
8585-114	REPAIRMAN, PUNCHED-CARD MACHINES (electronic equip.)	4	7	8585-126	CASH-REGISTER SERVICEMAN (mech. equip., n.e.c.)	4	5
8585-118	OFFICE-MACHINE SERVICEMAN (mech. equip., n.e.c.)	4	6				

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-M 467	I	4	7-5	190	Y01	
			2	2													

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply mechanical and electrical principles to ensure the satisfactory functioning of business and commercial machines;
- spatial perception to interpret diagrams and to visualize arrangement and relationships of parts and wiring to dismantle, repair and reassemble machines;
- form perception to discern pertinent details while inspecting machines for wear or malfunctions;
- eye-hand-finger co-ordination to use soldering equipment, hand and power tools and precision-measuring instruments;

- finger dexterity to adjust, repair or replace small parts such as gears, guides, rollers and pinions, in areas where freedom of hand movement is restricted;
- manual dexterity to skilfully dismantle and assemble machines;
- strength to perform light to medium work to repair and dismantle machines and occasional heavy work when lifting and carrying machines;
- acute hearing to detect malfunctioning machines or smooth running operation;
- near-visual acuity, accommodation and colour vision to fit and adjust small parts and to distinguish between colour-coded wires and components.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- ten to twelve years of general education;

- a one year course in office machine function and repair at a technical institute or trade school and two years of on-the-job training; or
- one to four years of on-the-job training, supplemented by manufacturers' training courses.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter with technical ability and supervisory potential may advance to 8580-126 FOREMAN: OFFICE MACHINE REPAIRMAN. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. With some additional training, advancement for some workers may also be to 5133-126 SALES REPRESENTATIVE, COMMERCIAL AND INDUSTRIAL EQUIPMENT AND SUPPLIES; or 5131-114 TECHNICAL SALESMAN, ELECTRONIC-DATA-PROCESSING.

Transfer

Because of specialization, transfer possibilities for workers in this chapter are limited. However, some workers may transfer to appropriate occupations requiring similar basic skills in Chapter 8525, BUSINESS AND COMMERCIAL MACHINES FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C. Experienced workers with knowledge of business practices may also become self-employed.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- working with things and objects;
- non-social work, carried on in relation to processes, machines and techniques;
- activities leading to satisfaction from tangible results.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change.

INSPECTING AND TESTING OCCUPATIONS, EQUIPMENT REPAIR, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with quality-control activities in the servicing and repair of mechanical equipment such as motor vehicles, aircraft, industrial, farm and construction machinery, railway rolling stock and precision instrument equipment. Worker functions include: analyzing data obtained by examining or testing the equipment before or after repair; comparing measurements of parts or results of tests to ensure conformance to specifications; working to close tolerances when inspecting or testing components; and manipulating hand tools and test instrument controls; and handling parts during quality-control work. Work activities include: studying drawings and instruction manuals to determine standards and specifications to be met; visually examining machinery for physical defects or mechanical malfunction; driving vehicles or operating equipment to ensure performance standards are met; recording inspection or test data; and making recommendations for equipment improvement, repair or disposal.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8586-110	AIRCRAFT INSPECTOR, REPAIR (air & space-craft)	4	8	8586-134	AIRCRAFT-HYDRAULICS TESTER (air & space-craft)	4	7
8586-114	LOCOMOTIVE INSPECTOR (rail. rolling stock)	4	8	8586-138	MAINTENANCE ANALYST (mech. equip., n.e.c.)	4	7
8586-118	INSPECTOR, HEAVY EQUIPMENT (mech. equip., n.e.c.)	4	8	8586-142	RAILWAY-CAR INSPECTOR (rail. rolling stock)	4	7
8586-122	INSPECTOR AND TESTER, METEOROLOGICAL EQUIPMENT (scient. & ind. equip., n.e.c.)	4	7	8581-130T	SHOP ESTIMATOR (motor vehicle)	4	7
8586-126	TESTER, AUTOMOTIVE VEHICLE (motor vehicle)	4	7	8586-146	INSPECTOR, BUS PARTS (motor vehicle)	4	6
8586-130	AIRCRAFT-ENGINE TESTER (air & space-craft)	4	7	8586-150	WHEEL-AND-AXLE INSPECTOR (rail. rolling stock)	4	6
				8586-154	GAS-METER TESTER (scient. & ind. equip., n.e.c.)	3	6

B

		GED	SVP			GED	SVP
8586-158	PRESSURE-CONTROL CALIBRATOR (scient. & ind. equip., n.e.c.)	3	4	8586-166	REFRIGERANT-GAS-LEAK TESTER (mech. equip., n.e.c.)	3	3
8586-162	TANK-CAR INSPECTOR (rail. rolling stock)	3	4	8586-170	HEDDLE EXAMINER (mech. equip., n.e.c.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	3	<u>3</u>	4	<u>3</u>	4	4		L-M 2347	I-B 5	4-3	8-6	91	0Y19
				4		4	4	3	<u>4</u>	5	5							
B	3	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5		L-M 347	I-B	3-2	4-2	91	0Y2
	4				<u>4</u>	5	<u>4</u>		<u>4</u>	4	3						913	

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand the function and use of mechanical equipment and related test equipment to determine operating conditions and necessary repairs;
- form perception to inspect, examine and test mechanical equipment;
- eye-hand-finger co-ordination to operate mechanical equipment and to use test and measuring devices with accuracy;
- manual dexterity to move hands skilfully when using hand tools or turning valves and knobs to make adjustments and tests on mechanical parts and assemblies;
- strength to carry or lift parts, tools, measuring equipment and testing devices that occasionally weigh up to fifty pounds;

- ability to stoop, kneel, crouch and crawl, and make tests or examine machinery when in awkward positions;
- ability to feel contours and determine smoothness of surfaces with finger tips;
- colour vision to interpret colour-coded markings on components.

Additionally, for Cluster A:

- spatial perception to interpret diagrams and visualize relationship of mechanical parts, and to detect faults in parts and assemblies;
- agility to climb and balance on ladders or workstands while inspecting large items of equipment;
- adaptability to work in the vicinity of noise such as the roar of aircraft engines under test, or the intermittent noises from power tools, pumps and accelerating engines.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

- A**
- ten to twelve years of general education;
 - for most occupations, several years of experience as a qualified worker in the applicable trade, and training in quality-control work.

- for other occupations, one to two years of on-the-job training.

- B**
- ten to twelve years of general education;
 - one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers with supervisory potential may advance to the appropriate occupations in Volume I, Unit Group 8580, FOREMEN: MECHANICS AND REPAIRMEN, N.E.C. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some workers in this chapter may transfer to occupations requiring similar basic skills and experience in Chapter 8526, INSPECTING AND TESTING OCCUPATIONS, FABRICATING AND ASSEMBLING METAL PRODUCTS, N.E.C., for example, 8586-110 AIRCRAFT INSPECTOR, REPAIR may transfer to 8526-242 AIRCRAFT INSPECTOR, ASSEMBLIES AND INSTALLATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- A**
- the evaluation of information against measurable or verifiable criteria;
 - the precise attainment of set limits, tolerances or standards;
 - the evaluation of information against judgmental or sensory criteria, such as listening to engines to determine nature of performance faults, or examining equipment for possible causes of mechanical defects;
 - a variety of duties often characterized by frequent change.

- B**
- the evaluation of information against measurable or verifiable criteria;
 - the precise attainment of set limits, tolerances or standards;
 - repetitive or short cycle operations carried out according to set procedures or sequences.

WATCH AND CLOCK REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with repairing clocks and watches, and mechanical movements used in clockwork-operated devices such as timers, meters and recorders. Worker functions include: working precisely when assembling and adjusting watch movements; analyzing condition or operation of timepieces to determine faults or nature of malfunctions; and manipulating hand tools to effect repairs. Work activities include: removing mechanisms from cases; examining parts using magnifying glass or loupe; repairing or replacing defective parts; cleaning and lubricating components; regulating movements, and reassembling timing devices.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8587-110	WATCH REPAIRMAN (scient. & ind. equip., n.e.c.)	4	7	8587-114	TAXIMETER REPAIRMAN (mech. equip., n.e.c.)	3	6
				8587-118	PARKING-METER SERVICEMAN (scient. & ind. equip., n.e.c.)	3	4

N.B. Occupation 8587-122 CASER (scient. & ind. equip., n.e.c.) has been transferred, for Vol. II purposes, to Chapter 8527, PRECISION INSTRUMENTS AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	4	4	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	5	5	S-L 47	I-B	4-3	7-4	910	Y0
	3	3		<u>3</u>												

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the principles of clockwork mechanisms, and to apply the appropriate techniques to make repairs and adjust timepieces or clock-operated devices;
- spatial perception to visualize the arrangement and relationships of static or moving parts;

- form perception to examine movement of timepiece closely to discover cause of malfunction;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to disassemble and clean timepieces and other instruments, repair or replace damaged parts and lubricate or adjust mechanisms, using precision watchmaking instruments;
- near visual acuity to work with minute parts to close tolerances, often requiring use of magnifying glasses.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- ten to eleven years of general education;
- for 8587-110 WATCH REPAIRMAN, a four to five-year apprenticeship program which includes regular periods of full-time attendance at a trade school; or

- a two to three-year program of courses in horology at an institute of technology or trade school and a shortened period of apprenticeship;
- completion of certification requirements.
- for other occupations, three months to two years of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter with supervisory potential may advance to 8580-138 FOREMAN: WATCH AND CLOCK REPAIRMEN; or 8580-130 FOREMAN: PRECISION INSTRUMENT MECHANICS AND REPAIRMAN. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to other occupations requiring similar skills, such as appropriate occupations, in Chapters 8527, PRECISION INSTRUMENTS AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C., and 8588, PRECISION INSTRUMENT MECHANICS AND REPAIRMEN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- work which is basically non-social in nature and is carried on in relation to techniques;
- dealing with things and objects;
- activities leading to satisfaction from tangible results.

Temperaments

- the precise attainment of set tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

PRECISION INSTRUMENT MECHANICS AND REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with installing and repairing scientific, engineering, optical and medical instruments, and cameras and similar equipment. Worker functions include: working to close tolerances when testing, adjusting, repairing and aligning precision instruments; manipulating component parts and hand tools to repair or replace defective units; analyzing data from test instruments to determine condition of equipment and cause of malfunctions; and comparing test data with specifications to ensure that standards are met. Work activities include: testing instrument and photographic equipment mechanisms and circuitry; disassembling faulty instruments; replacing defective and worn parts such as pivots, shafts and bearings; assembling equipment according to manufacturers' specifications; and making calibration adjustments.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8588-110	AIRCRAFT-INSTRUMENT MECHANIC (scient. & ind. equip., n.e.c.)	4	7	8588-130	PHOTO-FINISHING-EQUIPMENT REPAIRMAN (scient. & ind. equip., n.e.c.)	4	7
8588-114	INSTRUMENT MECHANIC, UTILITIES (scient. & ind. equip., n.e.c.)	4	7	8588-134	GAS-METER REPAIRMAN (scient. & ind. equip., n.e.c.)	4	6
8588-118	INSTRUMENT REPAIRMAN (scient. & ind. equip., n.e.c.)	4	7	8588-138	GYROSCOPE REPAIRMAN (scient. & ind. equip., n.e.c.)	4	6
8588-122	SURVEYING-AND-OPTICAL- INSTRUMENT REPAIRMAN (scient. & ind. equip., n.e.c.)	4	7	8588-142	WATER-METER REPAIRMAN (scient. & ind. equip., n.e.c.)	4	5
8588-126	CAMERA REPAIRMAN (scient. & ind. equip., n.e.c.)	4	7	8588-146	SPEEDOMETER REPAIRMAN (mech. equip., n.e.c.)	3	6
				8588-150	STEAM METERMAN (scient. & ind. equip., n.e.c.)	3	5
				8588-154	THERMOSTAT REPAIRMAN (scient. & ind. equip., n.e.c.)	3	5

B

		GED	SVP			GED	SVP
8588-158	AIRCRAFT-INSTRUMENT- MECHANIC HELPER (scient. & ind. equip., n.e.c.)	3	5	8588-170	SURVEYING-AND-OPTICAL- INSTRUMENT-REPAIRMAN HELPER (scient. & ind. equip., n.e.c.)	3	4
8588-162	INSTRUMENT-MECHANIC HELPER, UTILITIES (scient. & ind. equip., n.e.c.)	3	5	8588-174	CALIBRATOR, TORQUE WRENCH (scient. & ind. equip., n.e.c.)	2	4
8588-166	INSTRUMENT-REPAIRMAN HELPER (scient. & ind. equip., n.e.c.)	3	5	8588-178	GAS-METER-REPAIRMAN HELPER (scient. & ind. equip., n.e.c.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 47	I	4-3	7-5	190	0Y1
		4	4	<u>4</u>	<u>2</u>			<u>2</u>	<u>2</u>		4						0Y
B	3	4	4	3	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	L-M 347	I	3-2	5-3	139	2Y
	4			4	<u>4</u>			<u>4</u>	<u>2</u>		5						
								<u>2</u>									

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand the principles of precision-instrument construction and operation, and to apply appropriate techniques for installation, repair, and adjustment;
- numerical ability to analyze test results in order to diagnose cause of malfunction, and to apply shop mathematics to verify conformance to specifications;
- spatial perception to visualize, from drawings, the relationship and arrangement of parts in order to correctly set up and adjust precision instruments;
- form perception to examine mechanism and circuitry for defects or signs of wear;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to manipulate small parts of optical and photographic instruments, test equipment and precision hand tools.

B

- learning ability to understand instructions from mechanic or repairman and to apply precision-instrument repair techniques;
- form perception to clean parts and to examine parts for defects;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to manipulate small parts and tools when disassembling, installing, repairing and adjusting instruments.

All workers in this chapter also require:

- capacity to occasionally carry or lift equipment weighing up to fifty pounds;
- capacity to crouch, crawl, stoop and kneel to replace and test equipment in places of limited access;
- near visual acuity to examine, repair, install and adjust small components, circuits and mechanisms and to read dials, gauges, meters and diagrams.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- for some occupations, a two to four-year apprenticeship program which may be provincially regulated;

OR

- completion of an approved training course in a technical institute and a shortened period of apprenticeship.
- for other occupations, a two to four-year period of on-the-job training.

B

- nine to eleven years of general education;
- three months to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in helper occupations in Cluster B may, with experience and some additional training, advance to higher skilled occupations in Cluster A. Experienced workers in Cluster A with supervisory potential may advance to 8580-130 FOREMAN: PRECISION INSTRUMENT MECHANICS AND REPAIRMEN. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities may be to other occupations within the individual cluster or, with limited additional training, to appropriate occupations requiring similar basic skills in Chapters 8525, BUSINESS AND COMMERCIAL MACHINES FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.; 8527, PRECISION INSTRUMENTS AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.; and 8585, BUSINESS AND COMMERCIAL MACHINE MECHANICS AND REPAIRMEN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects;
- work that is basically non-social in nature and is performed in relation to machines and techniques;
- work leading to satisfaction from tangible results, such as the restoration of instruments to a serviceable condition.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B

Interests

- dealing with things and objects;
- routine, concrete and organized work;
- non-social work, carried on in relation to machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

OTHER MECHANICS AND REPAIRMEN, N.E.C.

This group includes occupations, not elsewhere classified, concerned with repairing and servicing miscellaneous mechanical equipment such as small domestic gasoline-powered lawn mowers, snow blowers, chain saws and portable generators and pumps.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8589-110	FIELD SERVICEMAN (mech. equip., n.e.c.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M 34567	I 5	4	7	9102	Y0751
8589-114	AUTOMATIVE-MAINTENANCE EQUIPMENT SERVICEMAN (mech. equip., n.e.c.)	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 347	B 67	4	7	190	Y0
8589-118	DREDGE MECHANIC (mech. equip., n.e.c.)	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	H 347	B 5	4	7	190	Y0
8589-122	GUNSMITH (mech. equip., n.e.c.)	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	4	7	190	Y0
8589-126	PUMP INSTALLER AND REPAIRMAN (mech. equip., n.e.c.)	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	H 347	O 6	4	6	190	Y0
8589-130	FUEL-INJECTION SERVICEMAN (mech. equip., n.e.c.)	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	H 347	I 56	4	6	190	Y0
8589-134	PUMP REPAIRMAN (mech. equip., n.e.c.)	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 347	B 56	3	7	190	Y0
8589-138	AIRPORT-MAINTENANCE MAN (construction; electric. equip.; mech. equip., n.e.c.)	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M 2347	B 67	3	7	19	Y01
8589-142	SAFE-AND-VAULT SERVICEMAN (mech. equip., n.e.c.)	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	VH 347	I 6	3	7	19	Y0
8589-146	LOCKSMITH (mech. equip., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 4	I	3	6	190	Y0
8589-150	PNEUMATIC-TOOL REPAIRMAN (mech. equip., n.e.c.)	3	4	4	<u>4</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 5	3	6	190	Y0
8589-154	PNEUMATIC-TUBE REPAIRMAN (mech. equip., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 47	I	3	6	190	Y0
8589-158	SALVAGE MAN, MACHINERY (mech. equip., n.e.c.)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 5	3	6	91	Y0
8589-162	HYDRAULIC-UNIT REPAIRMAN (mech. equip., n.e.c.)	<u>3</u>	4	3	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	H 347	I 4	3	6	190	Y0
8589-166	PNEUMATIC-UNIT TESTER AND REPAIRER (mech. equip., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	3	6	910	Y0
8589-170	SCALE MECHANIC (mech. equip., n.e.c.)	<u>3</u>	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	4	5	H 47	I	3	6	190	Y0
8589-174	FAREBOX SERVICEMAN (mech. equip., n.e.c.)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	3	6	19	Y0
8589-178	AIR-COMPRESSOR REPAIRMAN (mech. equip., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	3	6	190	Y0
8589-182	REPAIRMAN, HAND TOOLS (mech. equip., n.e.c.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I	3	5	19	Y0
8589-186	VENDING-MACHINE SERVICEMAN (mech. equip., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	M 347	I	3	5	190	Y0
8589-190	VALVE REPAIRMAN (mech. equip., n.e.c.)	3	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	4	H 347	I 467	3	5	19	Y0
8589-194	FIRE-EQUIPMENT SERVICEMAN (mech. equip., n.e.c.)	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	M 347	B 67	3	4	193	Y0
8589-198	BICYCLE REPAIRMAN (mech. equip., n.e.c.)	4	4	5	<u>4</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5	M 47	I	2	4	13	Y0
8589-202	PUMP-INSTALLER-AND-REPAIRMAN HELPER (mech. equip., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	H 347	O 6	2	3	31	23
8589-206	MINING-SHOVEL OILER (mining & quarrying)	4	4	5	4	4	4	<u>4</u>	4	<u>3</u>	5	5	M 234	O 5	2	3	31	23
8589-210	OILER AND GREASER (mech. equip., n.e.c.)	4	4	5	4	4	4	<u>4</u>	4	<u>3</u>	4	5	M 234	I 567	2	3	13	23

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS												
		Aptitudes										PA	EC	GED SVP Ints. Temps.
		G	V	N	S	P	Q	K	F	M	E	C		
8589-214	FIRE-EQUIPMENT-SERVICEMAN HELPER (mech. equip., n.e.c.)	4	4	5	4	4	4	<u>3</u>	4	<u>3</u>	5	5	M 34	B 67 2 3 13 23
8589-218	GARAGE SERVICEMAN (motor vehicle)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	M 34	I 6 2 3 13 23
8589-222	SPRAY-GUN REPAIRMAN (mech. equip., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I 7 2 3 31 23Y
8589-226	GREASER, JOURNAL BOX (rail. rolling stock)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 34	B 2 2 31 23

JEWELLERY AND SILVERWARE FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with fabricating, assembling and repairing fine and costume jewellery and precious metal ware. Worker functions include: analyzing data obtained by examining and considering the properties of diamonds and other precious stones to determine their value, purity, physical structure, colour-grading, cleavage lines and other relevant factors; working with utmost precision when measuring, marking, cutting, grinding, polishing and setting precious stones, or when fabricating and repairing silverware or jewellery; and manipulating and operating a variety of hand and power tools, optical aids and related equipment. Work activities include: shaping and setting gems; fabricating rings, brooches and bracelets from precious or semi-precious metals; assembling trophies, tableware, dresser sets and ornamental articles; and machining, riveting, soldering, cementing, abrading or polishing articles.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8591-110	DIAMOND CUTTER (jewellery & precious metal prod.)	4	8	8591-122	JEWELLER (jewellery & precious metal prod.)	4	7
8591-114	LAPIDARY (jewellery & precious metal prod.)	4	8	8591-126	PRECIOUS STONE SETTER (jewellery & precious metal prod.)	4	7
8591-118	GEMOLOGIST (jewellery & precious metal prod.)	4	7	8591-210	SILVERSMITH (jewellery & precious metal prod.)	4	7
				8591-214	HAMMERSMITH (jewellery & precious metal prod.)	3	6

B

		GED	SVP			GED	SVP
8591-218	POLISHER, SILVERWARE (jewellery & precious metal prod.)	3	5	8591-166	PEARL-EAR-RING MAKER (jewellery & precious metal prod.)	2	3
8591-222	FLATWARE-BUFFING-MACHINE SET-UP OPERATOR (jewellery & precious metal prod.)	3	4	8591-170	POLISHER (jewellery & precious metal prod.)	2	3
8591-150	BENCH HAND (jewellery & precious metal prod.)	3	4	8591-234	TROPHY ASSEMBLER (jewellery & precious metal prod.)	2	3
8591-154	RING MAKER (jewellery & precious metal prod.)	2	4	8591-238	HOLLOW-WARE-BUFFING- MACHINE TENDER (jewellery & precious metal prod.)	2	3
8591-158	RING STAMPER (jewellery & precious metal prod.)	2	4	8591-174	ARTIFICIAL-PEARL MAKER (jewellery & precious metal prod.)	2	2
8591-226	PROFILE TRIMMER (jewellery & precious metal prod.)	2	3	8591-242	CEMENTER, KNIFE PARTS (jewellery & precious metal prod.)	2	2
8591-130	CHAIN MAKER, HAND (jewellery & precious metal prod.)	2	3	8591-178	CHARGER (jewellery & precious metal prod.)	2	2
8591-162	EXPANSION-BRACELET ASSEMBLER (jewellery & precious metal prod.)	2	3	8591-182	FINDINGS FINISHER (jewellery & precious metal prod.)	2	2
8591-230	MOUNTER, HOLLOW-WARE (jewellery & precious metal prod.)	2	3	8591-186	CHAIN-MAKING-MACHINE TENDER (jewellery & precious metal prod.)	2	2
				8591-190	RIVETER (jewellery & precious metal prod.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	4	<u>3</u>	<u>2</u>	<u>2</u>	5	3	S-L 47	I 6	4-3	8-6	910	0Y9
			4				<u>2</u>	<u>3</u>	<u>3</u>		4						
B	4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S-L 47	I 56	3-2	5-2	139	2Y3
				<u>3</u>		5	<u>4</u>	4			5						

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand the composition and structure of precious stones and metals, and to acquire a high degree of skill to cut diamonds, appraise, shape or set gems, fabricate and repair jewellery, or assemble and repair silver hollow-ware;
- numerical ability to accurately compute dimensions, cutting angles, machine speeds or tolerances;
- spatial perception to visually imagine shape and form of jewellery or hollow-ware design in order to co-ordinate elements into a unified and pleasing article;
- form perception to detect slight differences, imperfections or irregularities when fabricating jewellery or metal ware, cutting diamonds or appraising or setting gems;
- eye-hand-finger co-ordination and finger dexterity to mark cutting lines, cut and polish precious stones and solder intricate and fine pieces of jewellery to form rings, bracelets and brooches;
- manual dexterity to skilfully perform a variety of tasks such as finishing articles with hand files and buffing machines, drilling and sawing open designs in silverware or hammering out deformities in hollow-ware.

B

- learning ability to understand and apply the methods and techniques of fabricating, repairing and assembling production jewellery and silverware;
- spatial perception to visualize how parts fit together, and finished articles during their fabrication and assembly;
- form perception to perceive pertinent details in jewellery and silverware, such as clarity of design, lustre and scratches, rough joints or other surface imperfections;
- eye-hand-finger co-ordination and manual dexterity to accurately and rapidly set up, adjust and use various types of precision tools and equipment;
- finger dexterity to manipulate small objects and to join minute parts together to form articles.

All workers in this chapter also require:

- capacity to reach for and handle parts, tools and materials;
- near visual acuity, depth perception and good colour vision to do very fine and intricate hand work, and additionally for workers in Cluster A to observe the various characteristics in diamonds and other precious stones;
- adaptability to work situations where there is a possibility of injury from cutting, grinding polishing equipment, and in addition some workers in Cluster B may work with, or in proximity to, equipment that creates considerable noise.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- a two to four-year apprenticeship program, or a similar form of on-the-job training, depending on the occupation; or

B

- for some occupations, a two-year course in jewellery and silverware work at an institute of technology, and on-the-job training.
- six to eight years of general education;
- one month to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in Cluster A with supervisory potential may advance to 8590-114 FOREMAN, JEWELLERY AND SILVERWARE WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. With additional training, some workers in Cluster B may advance to occupations requiring higher skills in that Cluster, or to some occupations in Cluster A. Some skilled workers in Cluster A who acquire knowledge of business practices may also become self-employed as owner of their own establishment.

Transfer

Because of specialization, transfer possibilities for workers in this chapter are limited, however workers may, with additional training, transfer to some occupations in other chapters that require similar skills, for example, 8587, WATCH AND CLOCK REPAIRMEN or 8588, PRECISION INSTRUMENT MECHANICS AND REPAIRMEN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried out in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster A:

- work leading to satisfaction from tangible results.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances and standards;
- the evaluation of information against sensory or judgmental criteria, such as deciding on the most feasible method of cutting or sawing precious stones.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.
- doing things only under specific instructions, allowing little or no room for independent action or judgment in working out job problems.

SHIPBUILDING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with building and repairing metal or wooden ships. Worker functions include: analyzing data from drawings and specifications to lay out lines of ship, reference points on structural parts or locations for installing equipment during ship construction; working to close tolerances when measuring, fitting and joining parts; manipulating hand and power tools when installing structural parts, piping and machinery; and handling shipbuilding tools and materials. Work activities include: marking reference points on drydock or way; building keel blocks, cradles, shoring and other supports for ships in dock; bolting, riveting or welding parts together; installing ship's piping systems; caulking seams in wooden hulls or deck planking; installing masts, booms, rigging and other gear on ships; and transporting materials to and about work site.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8592-110 LOFTSMAN (ship & boat bldg.)

4 8

B

GED SVP

8592-114 SHIPWRIGHT, METAL
(ship & boat bldg.)

4 8

8592-122 PIPE FITTER (ship & boat bldg.)

4 7

8592-126 SHIPFITTER (ship & boat bldg.)

4 7

8592-118 SHIPWRIGHT, WOOD
(ship & boat bldg.)

4 8

8592-130 RIGGER (ship & boat bldg.)

4 7

8592-138 JOINER (ship & boat bldg.)

3 7

C

GED SVP

8592-142 PNEUMATIC-TOOL OPERATOR
(ship & boat bldg.)

3 6

8592-158 SHIPFITTER HELPER
(ship & boat bldg.)

3 4

8592-150 WOOD CAULKER
(ship & boat bldg.)

3 5

8592-162 RIGGER HELPER
(ship & boat bldg.)

3 3

8592-154 SHIPWRIGHT HELPER
(ship & boat bldg.)

3 5

8592-166 PIPE-FITTER HELPER
(ship & boat bldg.)

3 3

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	3	<u>3</u>	<u>2</u>	<u>2</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 347	I	4	8	190	0Y14
B	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	3	4	M-H 2347	B 567	4-3	8-7	190	0Y1
	<u>2</u>			<u>2</u>					<u>2</u>	4	5						
C	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	3	5	M-H 234	B 567	3	6-3	193	2Y
	3		4				3										

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply the principles and technical knowledge of shipbuilding techniques and processes, and reasoning ability to make judgments in planning sequence of operations and in selecting proper tools and materials;
- numerical ability to apply shop mathematics to practical problems, computing dimensions and locating reference points;
- spatial perception to visualize the finished product in three dimensions, and the arrangement and relationship of static or moving parts represented in blueprints and diagrams;
- form perception for inspecting finished templates and moulds to verify accuracy;
- eye-hand co-ordination to place parts in position and use tools deftly and quickly when laying out and fabricating templates and plugs;
- finger dexterity to move the fingers and manipulate small objects when setting up and adjusting machines;
- manual dexterity to move the hands easily when using hand and power tools to work to close tolerances;
- physical capacity to perform light work and ability to work in awkward positions such as kneeling or crouching when preparing scribe boards on mould loft floor;
- good vision, depth perception and colour vision.

B

- learning ability to understand and apply shipbuilding techniques and reasoning ability to make decisions or judgements concerning sequence of operations, work procedures or materials used;
- numerical ability to perform arithmetic calculations accurately and quickly when calculating quantity, size or shape of items to be fabricated;
- spatial perception to visualize the arrangement of structural components and to judge distances when hoisting and positioning members or prefabricated sections, and aligning keel blocks prior to dry-docking operations;
- form perception for inspecting finished work to ensure it meets specified standards;
- eye-hand co-ordination and manual dexterity to use hand tools and power tools to work to close tolerances, or when splicing wire cable and rope;
- finger dexterity to manipulate small items and to operate manual controls of power tools;
- eye-hand-foot co-ordination for 8592-130 RIGGER, to work at heights, climb masts and rigging and balance in precarious positions while performing work activities;

- strength to perform medium to heavy work, occasionally involving the lifting of weights up to one hundred pounds;
- agility to climb ladders and maintain balance on scaffolding or rigging, and to work in awkward positions such as stooping, kneeling or crouching while reaching for and handling tools and materials in restricted or confined areas;
- near visual acuity for close-up work and depth perception;
- adaptability to working both inside or outside while exposed to a wide variety of temperatures or weather conditions and exposure to the continuous loud noise of a shipyard;
- adaptability to conditions where a number of physical hazards are prevalent, such as falling, being struck by falling objects and close proximity to operating machines;
- adaptability to working in ship's tanks and other spaces where there may be injurious effects from gases, fumes and dusts.

C

- learning ability to apply common-sense understanding to carry out written or oral instructions correctly;
- form perception to detect damaged areas when preparing surfaces for refinishing or when caulking seams to make them watertight;
- eye-hand co-ordination to make movement responses with the hands quickly and accurately;
- manual and finger dexterity to move the hands, wrists and fingers easily and quickly when splicing wire rope or cordage and sewing canvas;
- eye-hand-foot co-ordination for 8592-162 RIGGER HELPER to move and manoeuvre heavy weights in close quarters in response to signals from co-workers;
- strength to perform medium to heavy work occasionally involving the lifting of weights up to one hundred pounds;
- agility to climb ladders and scaffolding and to maintain balance and work in awkward positions such as kneeling, crouching or stooping while handling hand and power tools and other equipment or materials;
- adaptability to working both inside and outside while exposed to a variety of temperatures and seasonal weather conditions, and the continuous noise of shipyard operations;
- adaptability to conditions where a variety of hazards are prevalent such as danger of falls, falling objects, close proximity to operating machines and possible injurious effects of fumes, dusts, mists and gases.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- A and B**
- ten to twelve years of general education;
 - three to four or more years of apprenticeship or similar form of on-the-job training.

- C**
- eight to ten years of general education;
 - one month to one year of on-the-job training, depending on the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and additional training, some workers in this chapter may advance to higher skilled occupations within their own cluster or progressively from Cluster C to B and to A. Workers with supervisory potential may advance to appropriate foreman positions, such as 8590-118 FOREMAN, MARINE CRAFT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS; or 8590-130 DOCKMASTER. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some workers in this chapter may transfer to other occupations requiring similar skills within the chapter. With limited additional training, transfer may also be to occupations requiring similar basic skills, for example, 8592-110 LOFTSMAN may transfer to 8596-110 INSPECTOR, HULL; and 8592-118 SHIPWRIGHT, WOOD, and 8592-138 JOINER, may transfer to 8592-198 BOATBUILDER, WOOD, or to an appropriate occupation in Minor Group 835, WOOD MACHINING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A and B

Interests

- dealing with things and objects such as woodworking machines, hand and power tools and materials for fabricating detailed ship-construction patterns;
- work that is basically non-social in nature such as operating machines to cut and shape stock to construct master patterns;
- work leading to satisfaction from tangible results such as the complete and accurate fabrication of patterns or other items from beginning to end which forms the basis for building an entire ship.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change as indicated by the versatile use of wide assortment of machines, hand and power tools and other equipment for a variety of different operations.

Additionally, for A:

- the direction, control and planning of an entire activity or the activities of others.

C

Interests

- dealing with things and objects such as tools, equipment and materials;
- non-social work carried on in relation to processes, machines and techniques;
- routine, concrete and organized work such as assisting tradesmen in their duties.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of prescribed standards.

MARINE CRAFT MECHANICS

WORK PERFORMED

This chapter includes occupations concerned with installing, repairing and adjusting outboard motors, marine engines, machinery and auxiliary equipment in ships, boats and other marine craft. Worker functions include: analyzing data from drawings or other specifications to determine installation or repair procedures; working to close tolerances when laying out, positioning, securing and connecting equipment; comparing performance of installed equipment to specifications to ensure acceptable standards are met; manipulating hand tools when fitting parts; and handling materials, bars, rollers and lifting devices. Work activities include: bolting, screwing, drilling or machining parts and assemblies during installation and repair work; installing accessories such as fuel lines and electrical or mechanical controls; dismantling faulty equipment and replacing or repairing defective parts; and inspecting and testing machinery during dock and sea trials.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8592-134	ENGINE FITTER (ship & boat bldg.)	4	7	8592-202	MARINE-ENGINE MECHANIC (ship & boat bldg.)	4	7
				8592-206	OUTBOARD-MOTOR MECHANIC (ship & boat bldg.)	4	6

B

		GED	SVP
8592-222	OUTBOARD-MOTOR INSTALLER (ship & boat bldg.)	3	4

C

		GED	SVP
8592-178	ENGINE-FITTER HELPER (ship & boat bldg.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M-H 3467	B 56	4	7-6	190	0Y1
B	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 346	B 5	3	4	19	0Y
C	4	4	5	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	4	5	H 234	B 56	2	2	31	23

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand the construction of various types of engines and the functions of component parts and accessories, and reasoning ability and judgment to diagnose faults and select the best method of repair;
- numerical ability to make calculations for accurately positioning machinery and determining lay-out locations of piping systems for steam, water and fuel;

- spatial perception to visualize the relative position of machines and accessories and the relationship between moving and static components;
- form perception to detect defects during routine visual inspections;
- eye-hand co-ordination to quickly and accurately position parts and use hand and power tools;
- finger dexterity to make precise and nimble finger movements when manipulating small objects;
- manual dexterity to install gears, tighten bolts and replace mechanical parts;

- strength to perform medium to heavy work, involving the lifting and carrying of equipment, machinery and replacement parts weighing up to one hundred pounds;
- agility to crawl into confined or restricted areas and to work in awkward positions, such as kneeling, stooping or crouching while reaching for, handling and fingering parts, hand tools and power tools;
- good hearing to detect malfunctions by listening to engine sounds;
- near visual acuity to perform close-up work, and good depth perception and colour vision;
- adaptability to inside or outside conditions while exposed to the loud noise normally prevalent in a shipyard or the noise of engines being tested;
- adaptability to conditions where a variety of hazards exist such as the danger of falls or injury from falling objects, proximity of operating machinery, and possibility of cuts, bruises and burns when using hand and power tools.

B

- learning ability to understand and carry out written or oral instructions and to reason and make judgments when installing and adjusting outboard motors;
- spatial perception to visualize the position of hardware, such as brackets, pulleys and guides when installing steering, ignition and fuel control cables;
- form perception when inspection wiring and accessories for defects and missing parts;

- eye-hand co-ordination and manual dexterity to quickly and accurately install and adjust outboard motors and related units, using hand and power tools;
- finger dexterity to manipulate small objects such as set screws and other mechanical devices;
- physical capacity to perform medium work when lifting and carrying items weighing up to fifty pounds;
- agility to work in confined areas and in awkward positions, such as stooping or kneeling, while reaching for and handling motors, parts and hand and power tools;
- good hearing to detect sounds of rough running motors;
- adaptability to both inside and outside conditions while exposed to the loud noise of operating motors during test runs.

C

- learning ability to understand and follow simple instructions to perform a number of uncomplicated tasks;
- eye-hand co-ordination to make movement responses with the hands to move hoists, levers and rollers when assisting co-workers to remove or install machinery;
- finger dexterity to manipulate small objects such as nuts and bolts;
- manual dexterity to place parts and tighten screws, bolts and nuts;
- strength to lift and carry weights up to one hundred pounds;
- agility to climb and balance on ladders or scaffolding and to work in awkward positions, such as kneeling, crouching or stooping, while reaching for and handling tools and parts;
- adaptability to working both inside and outside while exposed to loud noises and a variety of hazards such as injury from falls or from falling objects and close proximity to operating machinery.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten to twelve years of general education;
- a four to five-year apprenticeship which may be provincially regulated, or a similar form of on-the-job training;
- completion of certification requirements.

B

- eight to ten years of general education;
- one to two years of on-the-job training.

C

- eight years of general education;
- one month of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

With experience and additional training, workers in C and B may advance to more skilled occupations in Cluster A. Those with supervisory potential may advance to 8590-118, FOREMAN, MARINE CRAFT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS or 8590-134, FOREMAN, MARINE SERVICE. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

With limited additional training, experienced workers in A and B may transfer to appropriate occupations requiring similar basic skills in Chapters 8596, INSPECTING, TESTING AND GRADING OCCUPATIONS: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C. or Chapter 8523, INDUSTRIAL, FARM, CONSTRUCTION AND OTHER MECHANIZED EQUIPMENT AND MACHINERY FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C. Workers in C may transfer to other helper occupations requiring similar skills in Minor Group 858 MECHANICS AND REPAIRMEN, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects such as hand and power tools, measuring instruments, weight lifting devices and blueprints;
- non-social work carried on in relation to machines and techniques;
- work leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as verifying dimensions or monitoring engine performance;
- the precise attainment of set limits or tolerances as indicated by the use of calipers and micrometers;
- a variety of duties often characterized by frequent change.

B

Interests

- dealing with things and objects of a mechanical nature;
- non-social work carried on in relation to machines and techniques.

Temperaments

- the evaluation of information against measurable or verifiable criteria to make judgments or decisions;
- the precise attainment of set limits or tolerances.

C

Interests

- routine, concrete and organized work such as helping co-workers in the performance of their duties;
- dealing with things and objects of a mechanical nature.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under direct supervision, with little room for independent action or judgment in working out job problems.

BOATBUILDING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with fabricating assembling and repairing wooden, aluminum, fibreglass or other types of boats and small craft. Worker functions include: analyzing data from specifications and drawings; comparing construction of completed boats to specified standards; working to close tolerances when laying out and fabricating parts; manipulating hand and power tools, brushes and measuring instruments; and handling parts and materials. Work activities include: laying out full-scale outline and reference points on mould-loft floor; making templates; shaping wooden parts using steam-box and moulds; cutting, positioning and aligning parts and fastening them by bolting, screwing, stapling, gluing, riveting or welding; caulking seams with sealing compound; fabricating and installing masts, booms, ladders, machinery mountings and steering controls; sanding and finishing surfaces; covering canoe hulls with canvas; and applying preservative coatings.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

8592-198 BOATBUILDER, WOOD
(ship & boat bldg.)

4 7

B

GED SVP

8592-210 BOAT BUILDER, ALUMINUM
(ship & boat bldg.)

3 5

8592-214 CANOE BUILDER
(ship & boat bldg.)

3 5

8592-218 FIBREGLASS-BOAT ASSEMBLER
(ship & boat bldg.)

3 4

8592-226 CANVAS-CANOE COVERER
(ship & boat bldg.)

2 4

8592-230 VENEER LAYER, PLYWOOD BOAT
(ship & boat bldg.)

2 3

8592-234 CANVAS-CANOE WATERPROOFER
(ship & boat bldg.)

2 2

QUALIFICATIONS PROFILES

Aptitudes													PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5		M 2347	156	4	7	190	0Y14
B	4	4	4	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5		M-H 34	156	3-2	5-2	19	2Y
	3			3	<u>3</u>	4	<u>4</u>			4							193	

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply boat building techniques and processes and to use judgment in planning sequence of operations and selection of tools and materials;
- numerical ability to use shop mathematics to solve practical problems;
- spatial perception to visualize the three dimensional form of the actual and mirror-image shape of components and the relationship of static and moving parts;
- form perception to verify that work is completed in accordance with specified standards;

- eye-hand co-ordination and manual dexterity to use hand tools and manually-controlled power tools when executing precision work;
- finger dexterity to manipulate small objects quickly and accurately and to tactually inspect finished surfaces for imperfections;
- physical capacity to lift and carry items such as lumber, structural parts and ladders weighing up to fifty pounds;
- agility to climb ladders and scaffolding, to maintain balance, and to work in awkward positions such as stooping, kneeling or crouching while reaching for and handling workpieces, hand tools and power tools;
- visual acuity for both close-up and distant work, good depth perception and colour vision;

- adaptability to loud and almost continuous noise from pneumatic tools and other types of machinery;
- adaptability to conditions where there are a variety of hazards or risk of injury from falls or from falling objects, burns from steam-box and lacerations when using power tools and shop machines.

B

- learning ability to apply common-sense understanding to carry out written or oral instructions and to use judgment in selecting tools and materials;
- form perception to inspect finished work for conformance to specified standards;
- eye-hand co-ordination to make quick and accurate movements when using hand tools and manually-controlled power tools;

- finger dexterity to make accurate and nimble finger movements when manipulating small objects, such as rivets, bolts and screws;
- manual dexterity to move the hands and wrists easily and skilfully when reaching for and handling workpieces, hand tools and manually-controlled power tools;
- physical capacity to lift and carry items weighing up to one hundred pounds and agility to work in awkward positions such as kneeling, crouching or stooping when working in confined areas;
- adaptability to loud noises from pneumatic tools and other types of equipment;
- adaptability to conditions where a variety of hazards or risk of injury exist such as cuts and bruises from power tools and shop equipment and burns during steam-box or welding operations.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten years of general education;
- a four-year apprenticeship program which may be provincially regulated, or a similar form of on-the-job training.

B

- eight to ten years of general education;
- one month to one year of on-the-job training and experience, depending on the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for some workers in this chapter may be to 8590-118 FOREMAN, MARINE CRAFT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS; or 8590-134, FOREMAN, MARINE SERVICE. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

With limited additional training, some workers in this chapter may transfer to appropriate occupations requiring similar basic skills in Chapter 8596, INSPECTING, TESTING AND GRADING OCCUPATIONS: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C. Similarly, 8592-198 BOATBUILDER, WOOD may transfer to 8592-118 SHIPWRIGHT, WOOD, 8592-138 JOINER or 8781-110 CARPENTER and 8592-210 BOAT BUILDER, ALUMINUM may transfer to 8529-198 METAL-PRODUCTS ASSEMBLER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects as indicated by the use of hand and power tools, blueprints and templates;
- non-social work carried on in relation to woodworking techniques and processes;
- work leading to satisfaction from tangible results such as performing all work activities involved in the construction of boats.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change;
- the direction, control and planning of the entire activity such as constructing a marine craft.

B

Interests

- dealing with things and objects;
- non-social work carried on in relation to craft techniques and processes.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

MARINE CRAFT OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities such as operating a marine railway to pull ships from water, preparing dock platform and controlling pumps and valves to regulate water level of dry-dock, and hand fabricating rope bumpers and fenders for ships, barges and tug boats.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8592-146	MARINE-RAILWAY OPERATOR (ship & boat bldg.)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>4</u>	4	5	M 47	I	3	5	19	0Y
8592-170	DOCKMAN (ship & boat bldg.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	M 234	O 45	2	4	193	2Y
8592-174	FENDER MAKER (ship & boat bldg.)	4	4	4	4	4	5	<u>3</u>	<u>3</u>	<u>3</u>	4	5	H 4	I	2	2	31	23Y

PAPER PRODUCT FABRICATING AND ASSEMBLING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with fabricating and assembling paper products such as bags, cartons, boxes, liners and envelopes. Worker functions include: setting up and maintaining bag, envelope and other paper products making machines; operating, tending or feeding machines that cut, slot, crease or form paper into various articles; comparing dimensions and quality of finished products to specified standards; manipulating paper parts and stapling guns, glue applicators and other work aids to fabricate and assemble articles by hand; compiling data from work orders to determine product specifications and amounts of materials needed; handling materials and supplies. Work activities include: installing and adjusting guides, rollers, knives and other components in machines; placing or threading materials into machines; moving controls to start, stop and regulate equipment; and examining completed products for defects.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8593-110	BAG-MAKING-MACHINE SET-UP MAN (paper prod.)	4	7	8593-122	CYLINDER PRESSMAN (paper prod.)	3	5
8593-114	ENVELOPE-MAKING-MACHINE SET-UP MAN (paper prod.)	3	6	8593-126	PLATEN PRESSMAN (paper prod.)	3	5

B

		GED	SVP			GED	SVP
8593-118	CORRUGATOR OPERATOR (paper prod.)	3	6	8593-146	SLITTER-CREASER OPERATOR (paper prod.)	3	4
8593-130	PARTITION-ASSEMBLY-MACHINE OPERATOR (paper prod.)	3	5	8593-150	ENVELOPE-FLAT-CUTTING-MACHINE SET-UP MAN (paper prod.)	3	3
8593-134	CRÊPING-MACHINE OPERATOR (paper prod.)	3	5	8593-154	TUBE-WINDING-MACHINE OPERATOR (paper prod.)	3	3
8593-142	CARTON-FORMING-MACHINE OPERATOR (paper prod.)	3	4	8593-158	AUTOMATIC-PAPER-CUTTING-MACHINE OPERATOR (paper prod.)	3	3

C

		GED	SVP			GED	SVP
8593-138	SAMPLE-CONTAINER MAKER, HAND (paper prod.)	3	5	8593-202	COLOUR-CARD MAKER, HAND (paper prod.)	2	2
8593-162	REVENUE-STAMP CUTTER (paper prod.; print. & pub.)	2	3	8593-206	ENVELOPE MAKER, HAND (paper prod.)	2	2
8593-166	BOX MAKER, PAPERBOARD (paper prod.)	2	3	8593-210	GREETING-CARD ASSEMBLER (paper prod.)	2	2
8593-198	BAG MAKER, HAND (paper prod.)	2	2	8593-214	PAPIER-MÂCHÉ MOULDER (paper prod.)	2	2

D

		GED	SVP			GED	SVP
8593-170	BAG-MAKING-MACHINE TENDER (paper prod.)	2	3	8593-186	PAPER-TWISTER TENDER (paper prod.)	2	3
8593-174	PAPER-BOX-MACHINE TENDER (paper prod.)	2	3	8593-190	SCORER (paper prod.)	2	3
8593-178	CORE MAN (pulp & paper)	2	3	8593-194	TAG-MACHINE TENDER (paper prod.)	2	3
8593-182	FOLDING-MACHINE TENDER (paper prod.)	2	3	8593-218	AUTOMATIC-TUBE-MACHINE TENDER (paper prod.)	2	2

		GED	SVP			GED	SVP
8593-226	BOOK-COVER CREASER (paper prod.)	2	2	8593-266	MILK-BOTTLE-CAP-MAKING- MACHINE TENDER (paper prod.)	2	2
8593-230	BOOK-JACKET-COVER-MACHINE TENDER (paper prod.)	2	2	8593-270	PAD GLUER, MACHINE (paper prod.)	2	2
8593-234	BOX FINISHER (paper prod.)	2	2	8593-274	PAPER-BAG-MACHINE TENDER (paper prod.)	2	2
8593-238	BUTTON-ENVELOPE-MACHINE TENDER (paper prod.)	2	2	8593-278	PAPER-CUP-MACHINE TENDER (paper prod.)	2	2
8593-242	CARDBOARD-LINING-MACHINE TENDER (paper prod.)	2	2	8593-282	PARTITION-SLOTTER-MACHINE TENDER (paper prod.)	2	2
8593-246	COLOUR-CARD MAKER, MACHINE (paper prod.)	2	2	8593-286	ROLLING-MACHINE TENDER (paper prod.)	2	2
8593-250	COMB-CUTTING-MACHINE TENDER (misc. prod. fab., n.e.c.)	2	2	8593-290	ROLL-SLICING-MACHINE TENDER (paper prod.)	2	2
8593-254	DRILL-PUNCH TENDER (paper prod.)	2	2	8593-294	SEALING-MACHINE TENDER (paper prod.)	2	2
8593-258	ENVELOPE-MACHINE TENDER (paper prod.)	2	2	8593-298	STAYER-MACHINE TENDER (paper prod.)	2	2
8593-262	MATCH-BOOK-MACHINE TENDER (misc. prod. fab., n.e.c.)	2	2				

E

		GED	SVP			GED	SVP
8593-222	PAPER-TUBE-PRODUCTION HELPER (paper prod.)	2	2	8593-306	CORRUGATOR-OPERATOR HELPER (paper prod.)	2	2
8593-302	BAG-MAKING-MACHINE-TENDER HELPER (paper prod.)	2	2	8593-310	CARTON-FORMING-MACHINE FEEDER (paper prod.)	2	1
				8593-314	SLITTER-CREASER FEEDER (paper prod.)	2	1

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 4	I 5	4-3	7-5	91	Y09	
		3		<u>4</u>				<u>4</u>		4	5						Y0	
B	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	L-M 47	I 5	3	6-3	91	Y0	
	4				<u>4</u>		<u>4</u>			5								
C	4	4	4	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	S-L 4	I	2	3-2	13	23Y	
			5			4			<u>4</u>		4							
D	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L-M 4	I 5	2	3-2	319	23Y	
			5			4			<u>4</u>	4								
E	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	L-H 34	I 5	2	2-1	31	23	
									<u>3</u>	5	4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

A and B

- learning ability to comprehend the basic principles of paper product fabricating machines and presses, to make reasoned judgments concerning their set up, operation and adjustment, and to understand and apply work instructions;
- spatial perception to visualize, from specifications, proper installation and adjustment of gears, cutting and scoring dies, plungers, rollers and guides;
- form perception to discern irregularities and imperfections in the size and shape of paper products such as bags and cartons;
- eye-hand-finger co-ordination to rapidly and accurately set up, operate and adjust machines and manipulate hand tools;
- finger dexterity to rapidly and accurately manipulate small switches, controls, and hand tools;

- manual dexterity to easily and skilfully install, remove and assemble machine components and paper articles;
- capacity to perform medium work, requiring frequent lifting and carrying of objects weighing up to twenty pounds, with occasional lifting of objects up to fifty pounds;
- near visual acuity to make close inspection of paper products and machine mechanisms;
- adaptability to working in a noisy environment.

C

- learning ability to understand and apply uninvolved instructions to hand assembling or fabricating operations;
- eye-hand-finger co-ordination and manual dexterity to rapidly and accurately assemble products by folding, cutting, stapling and painting;

CHAPTER 8593

- finger dexterity to rapidly and accurately use tools such as scissors or spatulas and to position small objects.

D and E

- learning ability to follow uninvolved instructions, perform simple machine tending and feeding procedures and assist machine operators;
- form perception to examine products for imperfections;
- eye-hand-finger co-ordination to rapidly and accurately adjust or

assist with the adjustment of malfunctioning machines and to arrange paper products;

- manual dexterity to move the hands easily and skilfully when feeding machines and using hand tools;
- capacity to perform light to medium work, requiring frequent lifting and carrying of objects weighing up to fifty pounds;
- the ability to stoop, kneel and crouch while feeding machines and lifting items;
- adaptability to working in a noisy environment.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- six months to four years of on-the-job training;

B

- eight to ten years of general education;

- three months to two years of on-the-job training.

C, D and E

- eight years of general education;
- one week to three months of on-the-job training.
- for 8593-138 SAMPLE-CONTAINER MAKER, HAND from six months to two years of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter may, with additional training, advance to occupations requiring higher skills within their individual cluster or in other clusters within the chapter. Experienced workers may also advance to quality-control occupations such as 8596-208 INSPECTOR, PAPER PRODUCTS. Those with supervisory potential may also advance to 8590-126 FOREMAN, PAPER PRODUCT FABRICATING AND ASSEMBLING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Helper and feeder occupations in Cluster E are normally considered entry jobs, and advancement is usually to machine tenders or operators for those with ability, interest and initiative.

Transfer

Workers in this chapter may transfer to other occupations requiring similar skills within the chapter, or with limited additional training, to appropriate occupations in Chapter 8599B, OTHER PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, N.E.C., for example, 8599-790 SLITTING-MACHINE OPERATOR; 8599-794 CUTTER OPERATOR; 8599-798 DIE-CUTTING-MACHINE OPERATOR; 8599-802 CUTTER, MACHINE; 8599-806 TUBE-CUTTING-MACHINE TENDER; and 8599-810 SLITTING-MACHINE-OPERATOR HELPER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

A and B

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects.

C, D and E

- dealing with things and objects;
- routine, concrete and organized duties.

Temperaments

A and B

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

Additionally, for Cluster D:

- non-social work, carried on in relation to processes, machines and techniques.

C, D and E

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

Additionally, for Clusters C and D:

- the precise attainment of set limits, tolerances or standards.

PAINTING AND DECORATING OCCUPATIONS, EXCEPT CONSTRUCTION

WORK PERFORMED

This chapter includes occupations concerned with preparing surfaces and applying decorative or protective coatings to a variety of manufactured products, machines and equipment; and dipping, coating, polishing and baking articles. Worker functions include: setting up, operating or tending equipment such as tumbling barrels, dipping tanks, bake ovens, coating machines and electrostatic sprayers; manipulating hand tools, brushes and spray guns to prepare surfaces and to paint, stain or decorate articles; working precisely to provide a high degree of quality when finished appearance is important; comparing colour and finish of completed work to established standards; and handling supplies, work aids and equipment. Work activities include: sanding, scraping, smoothing, cleaning and masking surfaces preparatory to painting; mixing coating materials to specifications; laying out lettering and designs for vehicles, signs or for artistic or ornamental effect; installing and adjusting guides, nozzles and other components in machines; moving controls to start, stop and regulate spraying equipment; loading and unloading parts and materials onto and from conveyors; and polishing and buffing stained or painted articles to bring out lustre.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8595-110	FURNITURE FINISHER (furn.)	4	6	8595-118	PAINTER, SHIPYARD (ship & boat bldg.)	3	6
8595-114	PAINTER (motor vehicle)	4	6	8595-122	SPRAYER PAINTER, SIGNS (misc. prod. fab., n.e.c.)	3	5

B

		GED	SVP			GED	SVP
8595-230	SPRAY-MACHINE SET-UP MAN TINWARE (metal stamp., press. & coat.)	3	6	8595-242	COATING-MACHINE OPERATOR, TINPLATE (metal stamp., press. & coat.)	3	4
8595-234	SILVERMAN (glass)	3	5	8595-246	PAINTER, ELECTROSTATIC (any ind.)	3	3
8595-238	SPRAYER OPERATOR, AUTOMATIC (any ind.)	3	4				

C

		GED	SVP			GED	SVP
8595-126	SPRAY PAINTER, FINISH, LARGE (any ind.)	3	5	8595-162	FRAME-MOULDING FINISHER (misc. prod. fab., n.e.c.)	2	3
8595-130	CAR PAINTER AND LETTERER (motor vehicle; rail. rolling stock)	3	5	8595-166	GILDER, METAL-LEAF (misc. prod. fab., n.e.c.)	2	3
8595-134	DECORATOR (furn.)	3	5	8595-170	PAINTER, AIRBRUSH (any, ind.)	2	3
8595-138	ENAMELLER, HAND (jewellery & precious metal prod.)	3	5	8595-174	TOUCH-UP PAINTER (motor vehicle; rail. rolling stock)	2	3
8595-142	SPRAY PAINTER, FINISH, SMALL (any ind.)	3	4	8595-310	MANNEQUIN FINISHER (misc. prod. fab., n.e.c.)	2	3
8595-146	FINISH-TOUCH-UP MAN (furn.)	3	4	8595-182	SPRAY PAINTER, ROUGH (any ind.)	2	2
8595-306	RUBBER (misc. prod. fab., n.e.c.)	3	4	8595-186	SPRAY PAINTER, ROUGH, BENCHWORK (any ind.)	2	2
8595-150	STAINER (furn.)	3	3	8595-190	DECAL APPLIER (cement, stone & clay)	2	2
8595-154	STAINER, SMOKING-PIPE (misc. prod. fab., n.e.c.)	2	3				
8595-158	BANDER, HAND (glass)	2	3				

CHAPTER 8595

		GED	SVP			GED	SVP
8595-194	PAINTER, MOTOR AND GENERATOR SUBASSEMBLIES (electric. equip.)	2	2	8595-198	UNDERCOATER (motor vehicle)	2	2

D

		GED	SVP			GED	SVP
8595-250	SPRAY-MACHINE TENDER (any ind.)	3	3	8595-274	COATING-MACHINE TENDER, TIN CANS (metal stamp., press. & coat.)	2	2
8595-254	PAINTER, TUMBLING BARREL (any ind.)	2	3	8595-278	DIPPER (any ind.)	2	2
8595-258	PAINTING-LINE TENDER, ELECTROSTATIC (any ind.)	2	3	8595-282	ENAMELLING-MACHINE TENDER (jewellery & precious metal prod.)	2	2
8595-262	WIRE-COATING-MACHINE TENDER (wire prod.)	2	3	8595-283	LINING-MACHINE TENDER (metal stamp., press. & coat.)	2	2
8595-266	BANDING-MACHINE TENDER, GLASSWARE (cement, stone & clay)	2	2	8595-286	TIP-BANDING-MACHINE TENDER (misc. prod. fab., n.e.c.)	2	2
8595-270	COATING-MACHINE TENDER, PENCIL (misc. prod. fab., n.e.c.)	2	2	8595-318	OVEN TENDER (furn.; metal fab., n.e.c.; sport & toy)		

E

		GED	SVP			GED	SVP
8595-178	PAINTER HELPER, SHIPYARD (ship & boat bldg.)	2	3	8595-322	SPRAY-PAINTER HELPER (any ind.)	2	2
8595-314	PAINTER HELPER (motor vehicle)	2	3	8595-326	CAR SCRUBBER (rail. rolling stock)	2	2
8595-202	CRESTER (sport. & toy)	2	2	8595-330	MASKER (any ind.)	2	2
8595-206	PAINTER, BRUSH (any ind.)	2	2	8595-334	STRIPPER (any ind.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	4	4	3	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>2</u>	L-M 347	I-B 7	4-3	6-5	190	Y0	
				4	<u>2</u>					5	<u>3</u>							
B	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	4	L-M 47	I 567	3	6-3	91	Y0	
			3	<u>4</u>			<u>4</u>				3							
C	4	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	<u>3</u>	L-M 347	I 7	3-2	5-2	139	Y09	
	3		5	<u>3</u>	<u>4</u>	5		4	<u>4</u>		4						Y02	
D	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>4</u>	5	4	L-M 4	I 7	3-2	3-2	319	2Y	
			5		<u>3</u>	5	<u>4</u>		<u>3</u>	4	5						23Y	
E	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	4	L-M 234	I 7	2	3-2	31	23	
			5			4				5	5							

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand the properties of paint, lacquer and related finishes, and to know the correct proportions and proper techniques for mixing, blending and applying paints or finishes to metal, wood or other materials;
- form perception to ensure smoothness of finish and to discern surface imperfections;
- eye-hand co-ordination to rapidly and accurately manipulate hand brushes or spray guns to paint surfaces evenly and smoothly;

- finger dexterity to use precise and agile finger movements when painting lettering or designs on plastic and neon signs, or painting wood trim on furniture;
- manual dexterity to use blow torches, sanding machines, scrapers, screwdrivers and other hand and power tools to disassemble furniture or prepare surface for painting;
- colour discrimination to a high degree, to mix paints to obtain desired colour, or to match exact shade of original colour;
- physical capacity to stoop, kneel or crouch and to perform work requiring medium strength;

- near visual acuity to avoid errors when reading formulas or specifications;
- adaptability to working in the presence of fumes, odours or dusts.

B

- learning ability to understand the operation of automatic spraying and coating machines and the techniques required to adjust and use them effectively;
- spatial perception to set up and adjust automatic spraying machines to co-ordinate speed of conveyor, action of spray guns and drying ovens, air temperature and pressure to synchronize feeding, coating and drying cycles;
- form perception to observe surface coatings for quality, thickness or defects and to detect clogged nozzle on spray gun by appearance of finish;
- eye-hand co-ordination to set up and operate automatic spraying and coating machines, to make adjustments to feeding mechanisms, align guides and holding devices and regulate oven temperatures;
- manual dexterity to turn valves, tighten nuts and bolts, replace or adjust nozzles on spray guns and load feeding mechanisms;
- capacity to perform work requiring medium strength;
- near visual acuity and a good field of vision to observe and effectively operate spray machines;
- colour vision to identify required paint or coating colours;
- adaptability to working against a background of noise from operating machinery, as well as exposure to odours from paint.

C

- learning ability to understand and follow instructions and procedures related to preparing surfaces, mixing paints and applying decorative or protective coatings;
- spatial perception to achieve proper spacing, balance and artistic effect when laying out and painting letters or designs;

- form perception to detect runs, streaks, spots or other painting irregularities;
- eye-hand co-ordination to use hand brushes or spray guns to paint a variety of articles;
- finger dexterity to make precise and nimble finger movement when painting glassware, pottery, mirrors, lamps or jewellery;
- manual dexterity to skilfully use hand and power tools to prepare surfaces for painting;
- colour discrimination to select and match colours according to specifications;
- physical capacity to perform light to medium work, and to reach for and handle a variety of objects;
- agility to stoop, kneel or crouch;
- near visual acuity to do fine hard work and touch-up work when decorating articles or repairing defects in finish;
- adaptability to health hazards such as fumes, odours and dusts.

D and E

- learning ability to understand and follow instructions concerning the tending of automatic paint spraying, coating and drying machines, and for workers in Cluster E to understand simple instructions concerning mixing of paints or preparing surfaces for painting and performing routine painting;
- form perception to observe application of surface coatings for proper thickness, smoothness and quality or for imperfections;
- eye-hand co-ordination to manipulate controls of automatic machines and to clean and smooth surfaces to be painted;
- manual dexterity to mix paints, to install or adjust nozzles on spray guns and to erect ladders and scaffolding;
- capacity to perform work requiring medium strength;
- capacity to climb, stoop, kneel and crouch;
- adaptability to working in constant presence of fumes from paint and dust from spraying or refinishing work.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A and B

- ten to twelve years of general education;
- three months to two years of on-the-job training, depending on the occupation.

- for 8595-118 PAINTER, SHIPYARD, in some provinces a three to four-year apprenticeship program, which may be provincially regulated.

C, D and E

- eight to ten years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

With additional training, some workers may advance to occupations requiring higher skills within their individual cluster, or to other clusters within this chapter. Those with supervisory potential may advance to 8590-122 FOREMAN, PAINTING AND DECORATING OCCUPATIONS, EXCEPT CONSTRUCTION. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to other occupations requiring similar skills within this chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

A, B, C and D

- dealing with things and objects;
- non-social work carried on in relation to processes, machines and techniques.

Additionally, for A:

- work leading to satisfaction from tangible results.

Additionally, for C and D:

- routine, concrete and organized work.

E

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

A, B and C

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

Additionally, for C:

- repetitive or short cycle operations.

D

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

E

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

INSPECTING, TESTING AND GRADING OCCUPATIONS: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C.

This group includes occupations, not elsewhere classified, concerned with quality-control activities in fabricating, assembling and repairing a variety of products including ships and boats, munitions and explosives and miscellaneous paper products. Includes quality-control activities in painting or applying protective, decorative or identifying coatings to products.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes							PA	EC	GED	SVP	Ints. Temps.					
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Inspectors and Testers, Ship and Boat Building</i>																		
8596-110	INSPECTOR, HULL (ship & boat bldg.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	3	4	4	<u>3</u>	4	4	H 2347	B 67	4	8	19	0Y91
8596-114	INSPECTOR, WOODEN BOATS (ship & boat bldg.)	<u>3</u>	3	4	4	<u>3</u>	4	4	4	4	5	4	L 45	I	3	5	19	0Y
8596-118	INSPECTOR AND FINISHER, FIBREGLASS BOATS (ship & boat bldg.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	4	L 347	I 5	3	4	19	0Y
8596-122	LEAK TESTER, ALUMINIUM BOATS (ship & boat bldg.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 34	I 45	2	2	139	2Y
<i>Inspectors and Testers, Munitions and Explosives</i>																		
8596-140	INSPECTOR, MUNITIONS (explosives)	<u>3</u>	3	3	3	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	5	4	L 47	I 6	3	5	19	0Y
8596-144	INSPECTOR, AMMUNITION LOADING (explosives)	<u>3</u>	3	3	4	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	5	5	L 47	I 56	3	5	19	0Y
8596-148	TESTER, BALLISTICS (explosives)	<u>3</u>	3	<u>3</u>	4	<u>4</u>	<u>3</u>	4	4	3	5	5	L 47	B 567	3	5	19	0Y
8596-152	DROP TESTER, CARTRIDGE PRIMERS (explosives)	3	4	3	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	5	5	L 4	I 56	3	3	139	02Y
8596-156	INSPECTOR, EXPLOSIVE DEVICES (explosives)	4	4	4	4	<u>3</u>	4	4	4	<u>4</u>	5	4	L 47	I 6	2	2	139	2Y
<i>Inspectors, Testers and Graders, Miscellaneous Products</i>																		
8396-110T	BALANCING-MACHINE OPERATOR (electric equip.; mech. equip., n.e.c.)	<u>3</u>	4	3	<u>3</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	4	5	M 47	I	4	6	19	20Y
8596-180	INSPECTOR, RETURNED MATERIALS (any ind.)	<u>3</u>	3	3	3	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	5	4	M 47	I	4	6	19	0Y9
8596-184	MATERIALS AND PARTS INSPECTOR (any ind.)	<u>3</u>	4	3	3	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	5	4	L 47	I	3	6	19	0Y
8596-188	FINAL INSPECTOR (furn.)	<u>3</u>	4	4	4	<u>3</u>	4	4	4	<u>4</u>	5	3	M 347	I	3	6	19	0Y
8596-192	INSPECTOR, FINISHES (electric. equip.; electronic equip.)	<u>3</u>	3	4	4	<u>3</u>	<u>3</u>	<u>4</u>	4	<u>4</u>	5	4	L 47	I	3	6	19	0Y
8596-196	INSPECTOR, JEWELLERY (jewellery & precious metal prod.)	<u>3</u>	3	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4	5	4	S 7	I	3	6	19	0Y
8596-200	INSPECTOR, PIANO (misc. prod. fab., n.e.c.)	3	3	4	<u>3</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	4	L 347	I	3	5	19	Y0
8596-204	INSPECTOR AND TESTER (plastic prod.)	3	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	<u>3</u>	L 47	I 6	3	4	19	0Y
8596-208	INSPECTOR, PAPER PRODUCTS (paper prod.)	3	4	4	3	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	<u>3</u>	L 47	I 5	3	4	19	0Y
8596-212	INSPECTOR, FILTER TIP (tobacco)	3	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>4</u>	5	5	L 47	I 5	3	4	139	20Y
8596-220	SHADOWGRAPH OPERATOR, SMALL PARTS INSPECTOR (any ind.)	3	4	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4	5	5	L 47	I	3	4	19	0Y
8596-224	TESTER, PACKAGING (pharm. & toil.)	3	4	3	4	<u>3</u>	4	<u>3</u>	4	<u>4</u>	5	5	L 47	I	3	4	19	0Y
8596-228	CASKET INSPECTOR (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>4</u>	5	4	H 47	I	3	4	19	0Y

GROUP 8596

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
8596-232	GOLF-CLUB INSPECTOR AND WEIGHER (sport. & toy)	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>4</u>	5	4	L 47	I	3	4	19	0Y
8596-236	INSPECTOR-GRADER, HOCKEY STICKS (sport. & toy)	4	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>4</u>	5	4	L 47	I 5	3	4	139	2Y
8596-240	BALL INSPECTOR AND REPAIRER (sport. & toy)	4	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>4</u>	5	5	L 47	I	3	3	139	20Y
8396-118T	STATIC BALANCER (electric. equip.; mech. equip., n.e.c.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	H 47	I	3	3	139	20Y
8596-244	GOLF-CLUB ADJUSTER (sport. & toy)	4	4	4	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5	M 47	I	2	4	139	20Y
8596-248	INSPECTOR, SLIDE FASTENER (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>4</u>	5	5	L 47	I	2	4	139	20Y
8596-252	TOY INSPECTOR (sport. & toy)	4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	4	<u>4</u>	5	4	L 47	I	2	4	139	20Y
8596-256	WALLPAPER INSPECTOR (paper prod.)	4	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	4	5	<u>3</u>	L 47	I 5	2	4	13	20Y
8546-118T	PANEL MATCHER (furn.)	4	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	<u>3</u>	M 47	I	2	4	13	20Y
8596-260	COATING-LINE CHECKER, HARDBOARD (woodworking)	4	4	4	4	<u>3</u>	4	<u>3</u>	4	4	5	<u>3</u>	L 47	I	2	3	139	20Y
8596-264	EYEGLASS-FRAME INSPECTOR AND SORTER (misc. prod. fab., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	4	S 47	I	2	3	13	2Y
8596-268	INSPECTOR, AMPOULE (pharm. & toil.)	4	4	4	4	<u>3</u>	5	<u>4</u>	<u>4</u>	4	5	4	S 47	I	2	3	13	2Y
8596-272	INSPECTOR, DRUGS AND TOILET PREPARATIONS (pharm. & toil.)	<u>4</u>	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	<u>4</u>	L 47	I	2	3	139	20Y
8596-276	INSPECTOR, MATCHES (misc. prod. fab., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>3</u>	4	5	5	L 4	I	2	3	13	20Y
8596-280	INSPECTOR, PAINT SPRAY (any ind.)	4	4	4	4	<u>3</u>	4	4	4	<u>4</u>	5	4	L 347	I 7	2	3	13	20Y
8596-284	SHIPPING INSPECTOR, FURNITURE (furn.; ret. trade)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	4	L 347	I	2	3	13	20Y
8546-122T	BOX INSPECTOR (woodworking)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	3	13	20Y
8596-288	FOUNTAIN-PEN INSPECTOR (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>4</u>	5	5	S 47	I	2	2	13	20Y
8596-292	BALL WEIGHER (sport. & toy)	4	4	<u>4</u>	4	<u>3</u>	4	<u>4</u>	4	4	5	4	L 47	I	2	2	13	20Y
8596-296	INSPECTOR, UMBRELLA (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	<u>3</u>	L 4	I	2	2	13	20Y
8596-300	PEN AND PENCIL INSPECTOR (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	4	5	4	L 47	I	2	2	13	20Y
8596-304	PRODUCTION-LINE INSPECTOR (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	5	<u>4</u>	<u>4</u>	<u>4</u>	5	4	L 47	I	2	2	13	20Y
8596-308	STENCIL EXAMINER (paper prod.)	4	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>4</u>	5	4	L 47	I	2	2	13	20Y

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with labouring or other elemental work in the fabrication, assembly and repair of a variety of products made from various types of materials. The primary worker function is handling hand tools, powered tools, scrapers, brushes, spray guns, hand trucks or machine controls to perform routine tasks. Work activities include: assembling and finishing small mechanical, electrical or miscellaneous products by bolting, screwing, soldering, gluing, riveting or pressing; cleaning metal articles using brushes, sandpaper and scraping tools; and dipping, brushing or spraying articles to form protective or decorative coatings.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
<i>Assembling and Finishing Miscellaneous Products</i>				8598-186	CLEANER, PORCELAIN-ENAMEL (any ind.)	1	2
8598-110	GLUER (any ind.)	2	2	8598-190	LABOURER, CANDLE (misc. prod. fab., n.e.c.)	1	2
8598-114	LABOURER GENERAL, ASSEMBLY LINE (any ind.)	2	2	8598-194	LABOURER, DIPPING (any ind.)	1	2
8598-118	ASSEMBLER, PENS AND PENCILS (misc. prod. fab., n.e.c.)	1	2	8598-198	PAPER-CONE DIPPER-AND-DRYER (paper prod.)	1	2
8598-122	KNIFE ASSEMBLER, HOLLOW HANDLE (jewellery & precious metal prod.)	1	2	8598-202	PICKLER AND DIPPER (jewellery & precious metal prod.)	1	2
8598-126	ASSEMBLER, SPECIALITY BRUSH AND MOP (misc. prod. fab., n.e.c.)	1	2	8598-206	MIRROR COATER (glass)	1	2
8598-130	CURTAIN-ROD ASSEMBLER (misc. prod. fab., n.e.c.)	1	2	8598-210	SPRAY-BOOTH CLEANER (any ind.)	1	1
8598-134	FILTER ASSEMBLER (misc. prod. fab., n.e.c.)	1	2	<i>Repairing, Cutting and Trimming Miscellaneous Products</i>			
8598-138	FOLDER-CEMENTER, SLIDE- FASTENERS (misc. prod. fab., n.e.c.)	1	2	8598-230	CRAYON CUTTER (misc. prod. fab., n.e.c.)	1	2
8598-142	JEWELLERY-PARTS ASSEMBLER (jewellery & precious metal prod.)	1	2	8598-234	SLIDE-FASTENER REPAIRER (misc. prod. fab., n.e.c.)	1	2
8598-146	LAMP-SHADE JOINER (misc. prod. fab., n.e.c.)	1	2	8598-238	TRIMMER, BROOM (misc. prod. fab., n.e.c.)	1	2
8598-150	NECKLACE ASSEMBLER (jewellery & precious metal prod.)	1	2	8598-242	TRIMMER, PAPER-DOILIES (paper prod.)	1	1
8598-154	PAINT-ROLLER WINDER (misc. prod. fab., n.e.c.)	1	2	8598-246	WALLPAPER PREPARER (paper prod.)	1	1
8598-158	SLIDE-FASTENER-CHAIN ASSEMBLER (misc. prod. fab., n.e.c.)	1	2	<i>Fabricating, Miscellaneous Products</i>			
8598-162	VACUUM-BOTTLE ASSEMBLER (glass)	1	2	8598-266	BAGGING-MACHINE FEEDER (any ind.)	1	2
<i>Cleaning, Blending, Dipping and Coating Miscellaneous Products</i>				8598-270	CRÉPING-MACHINE-OPERATOR HELPER (paper prod.)	1	2
8598-182	BARREL LINER, HAND (woodworking)	1	2	8598-274	PAD GLUER, HAND (paper prod.)	1	2
				8598-278	PENCIL-BLANK PRESSER (misc. prod. fab., n.e.c.)	1	2
				8598-282	PREPARER, CORN BROOM MATERIAL (misc. prod. fab., n.e.c.)	1	2

CHAPTER 8598

8598-286	TRUNK COVERER	1	2		
	(misc. prod. fab., n.e.c.)				
8598-114T	WEDGER, MACHINE	1	2		
	(misc. prod. fab., n.e.c.)				
	<i>Other Elemental Occupations</i>				
8598-306	CLIP-LOADING-MACHINE FEEDER	1	2		
	(explosives)				
8598-310	SILVERING-MACHINE FEEDER	1	2		
	(glass)				
8598-314	BANDOLEER STRAIGHTENER-STAMPER	1	2		
	(explosives)				
8598-318	DECAL SELECTOR-APPLIER	1	2		
	(rail. trans.)				
8598-322	ORNAMENTAL-STONE SETTER	1	2		
	(jewellery & precious metal prod.)				
8598-326	STAMP FILLER	1	2		
	(any ind.)				
8528-110T	TINWARE WORKER	1	2		
	(metal stamp., press. & coat.)				
8598-330	LABOURER, SHIPYARD	1	1		
	(ship & boat bldg.)				
8598-334	PAINT-BRUSH BONDER	1	1		
	(misc. prod. fab., n.e.c.)				
8598-338	RACKER	1	1		
	(jewellery & precious metal prod.)				

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	5	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5		L-M 47	I 5	2-1	2-1	13	23
	4							<u>3</u>	4								

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple work instructions to perform a variety of uncomplicated tasks;
- eye-hand-finger co-ordination for activities such as positioning parts in specified relationship to each other before assembly;
- manual dexterity and the capacity to extend the hands in order to feel and handle parts, materials, tools and other items;

- sufficient strength to perform work ranging from light to medium, requiring the lifting, carrying or handling of parts, tools, materials or products; the pushing of hand trucks; or the cleaning of work areas, equipment or products;
- near-visual acuity to perform such tasks as positioning and aligning parts for assembly and examining items for defects;
- capacity to work in the proximity to noisy machinery and equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- no specified educational level;

- on-the-job training ranging from a short demonstration to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs and advancement is normally to more highly skilled occupations in Minor Group 859, OTHER PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS for workers who demonstrate ability, interest and initiative.

Transfer

Transfer may be to other occupations requiring similar skills within the chapter or to occupations in labouring and elemental work found in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- work that is routine, concrete and well organized.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

MUSICAL INSTRUMENT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with fabricating, assembling and repairing musical instruments such as pianos, pipe organs, wind instruments and guitars. Worker functions include: analyzing and compiling information from specifications and drawings or from examination of instruments to determine appropriate materials and procedures; working to precise tolerances when laying out, machining, fitting and joining parts; manipulating hand and power tools; and comparing appearance and performance of completed instruments with required standards. Work activities include: dismantling, restringing, tuning, painting, reassembling, testing and tuning musical instruments; making piano bass-strings; and rehairing string-instrument bows.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8599-214	HARPSICHORD BUILDER (misc. prod. fab., n.e.c.)	4	8	8549-226T	STRINGED-INSTRUMENT REPAIRMAN (misc. prod. fab., n.e.c.)	4	7
8599-218	MUSICAL-INSTRUMENT REPAIRMAN (ret. trade; whole. trade)	4	8	8599-238	WIND-INSTRUMENT REPAIRMAN (ret. trade; whole. trade)	4	7
8549-222T	STRINGED-INSTRUMENT MAKER (misc. prod. fab., n.e.c.)	4	8	8599-242	ORGAN-PIPE VOICER (misc. prod. fab., n.e.c.)	4	7
8599-222	PIPE-ORGAN TUNER AND REPAIRMAN (misc. prod. fab., n.e.c.)	4	7	8599-246	PIPE-ORGAN ERECTOR (misc. prod. fab., n.e.c.)	4	7
8599-226	ACCORDION REPAIRMAN (ret. trade; whole. trade)	4	7	8599-250	PIANO-TONE REGULATOR (misc. prod. fab., n.e.c.)	3	6
8599-230	PIANO REPAIRMAN (ret. trade; whole. trade)	4	7	8599-258	PERCUSSION-INSTRUMENT REPAIRMAN (ret. trade; whole. trade)	3	5
8599-234	PIPE-ORGAN BUILDER (misc. prod. fab., n.e.c.)	4	7	8599-262	PIANO-ACTION REGULATOR (misc. prod. fab., n.e.c.)	3	5
				8599-266	PIANO-BACK ASSEMBLER (misc. prod. fab., n.e.c.)	3	5

B

		GED	SVP			GED	SVP
8599-270	PIANO SUBASSEMBLER (misc. prod. fab., n.e.c.)	3	4	8599-278	ROUGH TUNER (misc. prod. fab., n.e.c.)	2	4
8599-272	PIANO TUNER (misc. prod. fab., n.e.c.; ret. trade; whole. trade)	3	4	8599-282	BOW REHAIRER (ret. trade; whole. trade)	2	4
8599-274	BASS-STRING WINDER (misc. prod. fab., n.e.c.)	2	4	8599-286	PIANO STRINGER (misc. prod. fab., n.e.c.)	2	4

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	4	<u>3</u>	<u>3</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M-H 3467	I 5	4-3	8-5	190	0Y9
			<u>3</u>	<u>4</u>	<u>4</u>	4		<u>4</u>	<u>2</u>	4							
			<u>2</u>														
B	4	4	4	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L-M 46	I 5	3-2	4	193	2Y9
	3		5			4	<u>3</u>		<u>4</u>								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to acquire a thorough knowledge of the procedures and techniques required to fabricate, assemble and repair musical instruments;
- form perception to visually examine instruments for physical defects such as worn and broken parts, warps or splits;
- eye-hand-finger co-ordination and manual dexterity to use hand and power tools or to manually fit and assemble musical instruments;
- finger dexterity to move the fingers accurately and with agility when tuning or playing instruments, or when manipulating small parts and tools;
- physical capacity to lift and carry instruments and parts weighing up to one hundred pounds and to reach for and handle a variety of tools and materials;

- ability to make fine discriminations of tonal qualities when tuning or testing instruments;
- adaptability to working in proximity to loud or high-pitched sounds of musical instruments and to the noise generated by power tools and machinery;

Additionally, workers in Cluster A require:

- numerical ability to accurately determine dimensions when fabricating, repairing, rebuilding or restoring instruments;
- spatial perception to visualize shape and appearance of finished instruments from two-dimensional layouts or design specifications;
- capacity to stoop, kneel or crouch to work on lower sections of harpsichords, pianos or pipe organs;
- near visual acuity to prepare layouts, or to do fine hand and touch-up work.

TRAINING AND ENTRY REQUIREMENTS

Workers in these cluster normally require:

- A**
- ten to twelve years of general education;
 - one to four years or more of on-the-job training and related experience depending on the occupation;

- B**
- seven to nine years of general education;
 - up to six months of on-the-job training.
 - blind persons, trained by the Canadian National Institute for the Blind, may find employment as 8599-272 PIANO TUNER.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Because of the high degree of specialization, advancement possibilities for workers in the musical instrument industry are limited. However, some workers may, with limited additional training, advance to other occupations within their own cluster, or from Cluster B to A. Workers with supervisory potential may become foremen of other workers in this field.

Transfer

Possibilities for transfer are also limited, but some workers may transfer to occupations requiring similar basic skills within their individual cluster or to appropriate occupations in Chapter 8339, METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING, N.E.C. or Minor Group 854, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work carried on in relation to processes, machines and techniques

Additionally,

for Cluster A:

- activities leading to satisfaction from tangible results.

for Cluster B:

- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- for occupations which include the tuning of the instrument, the evaluation of information against sensory or judgmental criteria, such as tuning pianos or organs by aural comparison to a tuned string or pipe.

Additionally,

for Cluster A:

- the evaluation of information against measurable or verifiable criteria, such as aligning piano actions to obtain specified clearance between components;

for Cluster B:

- repetitive or short cycle operations carried out according to set procedures or sequences.

GROUP 8599B

OTHER PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with fabricating, assembling and repairing a variety of products such as ammunition, explosives and pyrotechnics, sporting goods, brooms, brushes and mops, zippers, ophthalmic goods, and wigs.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes							PA	EC	GED	SVP	Ints.	Temps.				
		G	V	N	S	P	Q	K	F	M	E	C						
Ammunition, Explosives and Pyrotechnics																		
Fabricating and Assembling Occupations, n.e.c.																		
8599-110	AMMUNITION WORKER (gov. serv.)	<u>3</u>	3	4	3	<u>3</u>	3	<u>3</u>	4	<u>3</u>	3	4	H 347	B 6	3	6	19	0Y8
8599-112	FIREWORKS MAKER (explosives)	<u>3</u>	4	3	<u>4</u>	4	4	<u>3</u>	4	<u>3</u>	5	5	M 47	I 6	3	6	19	0Y8
8599-114	TRACER-BULLET-CHARGING MACHINE OPERATOR (explosives)	<u>3</u>	4	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 6	3	5	91	Y08
8599-118	SHOTGUN-SHELL-BODY MAKER (explosives)	4	4	4	<u>3</u>	<u>3</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	M 347	I 5	3	4	91	Y0
8599-120	SHOTGUN-SHELL-TUBE MAKER (explosives)	4	4	4	<u>4</u>	<u>3</u>	5	<u>4</u>	4	<u>4</u>	5	5	M 34	I 5	3	4	91	Y0
8599-122	DYNAMITE-PACKING-MACHINE TENDER (explosives)	4	4	4	<u>4</u>	<u>3</u>	5	<u>4</u>	3	<u>3</u>	5	5	M 47	I 67	3	4	91	Y08
8599-126	BLASTING-CAP ASSEMBLER (explosives)	4	4	4	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	4	5	L 4	I 6	2	3	193	20Y8
8599-130	DETONATOR-AND-FUSE ASSEMBLER (explosives)	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I 6	2	3	139	20Y8
8599-134	FLARE ASSEMBLER (explosives)	4	4	4	4	4	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I 6	2	3	139	20Y8
8599-138	IGNITER-AND-PRIMER ASSEMBLER (explosives)	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I 56	2	3	139	20Y8
8599-142	MUNITIONS ASSEMBLER (explosives)	4	4	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	M 47	I 6	2	3	139	20Y8
8599-146	CARTRIDGE LOADER (explosives)	4	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I 56	2	3	319	20Y
8599-150	PELLET-PRESS TENDER (explosives)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I 6	2	3	913	20Y8
8599-154	SHOTGUN-SHELL-ASSEMBLY-MACHINE TENDER (explosives)	4	4	5	<u>4</u>	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 347	I 56	2	3	913	2Y
8599-158	SHOTGUN-SHELL-LOADING-MACHINE TENDER (explosives)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I 56	2	3	913	20Y
8599-162	RIM-FIRE PRIMING-MACHINE TENDER (explosives)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 4	I 56	2	3	319	23Y
8599-166	SHELL-CAVITY LINER (explosives)	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	M 47	I 6	2	2	139	20Y
8599-170	ANVIL-SEATING-PRESS TENDER (explosives)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I 56	2	2	319	23Y
8599-172	POWDER-CUTTING TENDER (explosives)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>4</u>	5	5	H 47	I 67	2	2	319	23Y
8599-174	PRIMER-INSERTING-MACHINE TENDER (explosives)	4	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I 56	2	2	319	23Y
8599-178	WAXER (explosives)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	4	M 34	I	2	2	319	23Y
8599-182	FOILING-MACHINE TENDER (explosives)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I 56	2	2	319	23Y
8599-186	PRESSMAN, PYROTECHNICS (explosives)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	M 4	I 6	2	2	319	23Y
8599-190	WATERPROOFER (explosives)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I 567	2	2	319	23Y
8599-194	BOX FILLER, CHARGED PRIMERS (explosives)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	S 47	I 6	2	2	31	23
Sporting Goods Fabricating, Assembling and Repairing Occupations, n.e.c.																		
8599-306	BILLIARD AND BOWLING EQUIPMENT REPAIRMAN (sport. & toy)	<u>3</u>	4	3	<u>3</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	3	5	VH 347	I 5	4	7	19	Y0

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
8599-310	ARCHERY-BOW REPAIRMAN (sport. & toy)	<u>3</u>	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	5	4	M 47	I 57	3	6	19	Y0
8599-314	GOLF-CLUB REPAIRMAN (sport. & toy)	<u>3</u>	4	4	4	4	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	3	6	19	Y0
8599-318	ARCHERY-BOW MAKER (sport. & toy)	<u>3</u>	4	4	<u>3</u>	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I 57	3	6	19	Y0
8599-322	BILLIARD-TABLE-CUSHION MOUNTER (sport. & toy)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	3	5	19	Y0
8599-326	GOLF-CLUB-HEAD FINISHER, IRON (sport. & toy)	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	4	L 47	I 56	3	5	91	Y0
8599-330	SPORTING-GOODS REPAIRMAN (sport. & toy)	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	3	5	139	2Y
8599-334	BILLIARD-CUE WEIGHTER (sport. & toy)	4	4	3	<u>3</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I 57	2	5	139	20Y
8599-338	ARCHERY-BOW FINISHER (sport. & toy)	4	4	4	<u>4</u>	4	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I 57	2	4	139	2Y
8599-342	BILLIARD-TABLE SERVICEMAN (sport. & toy)	4	4	4	4	4	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 347	I	3	3	139	2Y
8599-346	GOLF-CLUB WEIGHTER (sport. & toy)	4	4	<u>4</u>	4	4	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I 6	2	2	139	2Y
8599-350	GOLF-CLUB ASSEMBLER (sport. & toy)	4	4	4	4	4	5	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 6	2	2	139	23Y
8599-354	GOLF-CLUB-HEAD ADJUSTER (sport. & toy)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I	2	2	139	2Y
8599-358	ARCHERY-BOW-STRING MAKER (sport. & toy)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	31	23
8599-362	BASKETBALL COVERER (sport. & toy)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	S 47	I	2	2	31	23Y
8599-366	FISHING-ROD ASSEMBLER (sport. & toy)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	31	23Y
8599-370	FISHING-ROD-GUIDE WINDER (sport. & toy)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	4	S 47	I	2	2	319	23Y
8599-374	FLETCHER (sport. & toy)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	S 47	I	2	2	31	23
8599-378	RACQUET STRINGER (sport. & toy)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	L 47	I	2	2	31	23
8599-382	SNOWSHOE WEAVER (sport. & toy)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	M 4	I	2	2	31	23
8599-386	BASEBALL-CENTRE WINDER (sport. & toy)	4	4	4	4	4	4	<u>4</u>	4	<u>4</u>	5	5	L 47	I 5	2	2	319	23Y
8599-390	INFLATED-BALL MOULDER (sport. & toy)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	M 47	I	2	2	319	23Y
8599-394	STUFFING-MACHINE TENDER (sport. & toy)	4	4	4	4	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	5	L 4	I 7	2	2	319	23Y
8599-398	ARROW ASSEMBLER (sport. & toy)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I	2	2	31	23Y
8599-402	FISHING-ROD FINISHER (sport. & toy)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	31	23Y
<i>Broom, Brush and Mop Fabricating and Assembling Occupations, n.e.c.</i>																		
8599-422	BRUSH-MAKING-MACHINE OPERATOR (misc. prod. fab., n.e.c.)	4	4	4	<u>4</u>	4	4	<u>4</u>	4	<u>3</u>	4	5	L 4	I 5	3	4	913	Y0
8599-426	ROTARY-BRUSH-MAKING-MACHINE OPERATOR (misc. prod. fab., n.e.c.)	4	4	4	<u>3</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 47	I 6	3	4	913	Y0
8599-430	PAINT-BRUSH-HEAD MAKER (misc. prod. fab., n.e.c.)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	5	5	S 4	I	2	4	13	2Y
8599-434	BROOM WINDER (misc. prod. fab., n.e.c.)	4	4	5	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	<u>4</u>	5	M 47	I 6	2	3	13	23
8599-438	BRUSH FINISHER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	4	L 47	I 7	2	3	13	23
8599-442	BRUSH MAKER, HAND (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>3</u>	4	<u>3</u>	5	5	L 47	I	2	3	13	23
8599-446	BRUSH-MATERIAL PREPARER (misc. prod. fab., n.e.c.)	4	4	4	4	4	4	<u>3</u>	4	<u>3</u>	5	4	L 4	I 36	2	3	13	23Y
8599-450	PAINT-BRUSH FINAL ASSEMBLER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	L 4	I	2	3	319	23Y

GROUP 8599B

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8599-454	TWISTED-WIRE-BRUSH MAKER (misc. prod. fab., n.e.c.)	4	4	4	4	4	4	<u>3</u>	4	<u>3</u>	4	5	L 4	I 6	2	3	913	2Y
8599-458	BROOM-STITCHING-MACHINE OPERATOR (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>3</u>	4	<u>3</u>	4	5	L 4	I 6	2	2	913	23Y
8599-462	MOP MAKER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	L 4	I	2	2	13	23
8599-466	BROOMCORN DYER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	4	M 4	I 45	2	2	31	23
8599-470	PAINT-ROLLER-COVER TRIMMER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	L 4	I 6	2	2	139	23
<i>Zipper Fabricating and Assembling Occupations, n.e.c.</i>																		
8599-490	ZIPPER-CHAIN-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 5	2	4	913	20Y
8599-494	ZIPPER-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	L 47	I 35	2	3	913	2Y
8599-498	ZIPPER-CUTTING-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	5	L 4	I 5	2	2	319	23Y
8599-502	SLIDER ASSEMBLER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	<u>4</u>	5	L 4	I	2	2	319	23
8599-506	ZIPPER FINISHER, HAND (misc. prod. fab., n.e.c.)	4	4	4	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	5	S 4	I	2	2	31	20Y
8599-510	ZIPPER-STOP ATTACHER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	S 4	I 5	2	2	31	23
<i>Ophthalmic Goods Fabricating and Assembling Occupations, n.e.c.</i>																		
8599-530	LENS MOUNTER (scient. & ind. equip., n.e.c.)	4	4	4	3	<u>2</u>	5	<u>3</u>	<u>2</u>	4	5	4	S 47	I	2	4	13	20Y
8599-534	MULTIFOCAL-LENS ASSEMBLER (scient. & ind. equip., n.e.c.)	4	4	5	4	4	5	<u>3</u>	<u>3</u>	<u>4</u>	5	5	S 47	I	2	2	31	2Y
8599-538	ASSEMBLER, EYEGLASS FRAMES (scient & ind. equip., n.e.c.)	4	4	5	4	<u>2</u>	5	<u>3</u>	<u>3</u>	4	4	5	L 47	I	2	2	31	2Y
<i>Wig Making and Hairwork Occupations, n.e.c.</i>																		
8599-558	WIG MAKER, HAND (misc. prod. fab., n.e.c.)	3	4	4	<u>3</u>	3	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S 47	I	3	5	190	0Y
8599-562	MANNEQUIN-WIG MAKER (misc. prod. fab., n.e.c.)	3	3	4	<u>3</u>	3	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	S 47	I 7	3	5	19	0Y
8599-266	WIG-HAIR PREPARER (misc. prod. fab., n.e.c.)	3	4	4	4	4	4	<u>4</u>	<u>4</u>	<u>3</u>	5	<u>2</u>	L 47	I	3	4	19	9Y
8599-570	ROOTING-MACHINE OPERATOR (misc. prod. fab., n.e.c.)	4	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>4</u>	5	S 4	I	2	3	913	2Y
8599-574	DOLL-HAIR STYLIST (sport. & toy)	4	4	5	<u>4</u>	4	4	<u>3</u>	4	<u>3</u>	5	5	S 47	I 7	2	2	13	2Y
<i>Miscellaneous Product Fabricating Occupations, n.e.c.</i>																		
8599-594	ASSEMBLY-LINE EXPEDITER (any ind.)	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M 4567	I 56	3	5	169	0Y
8599-598	INSULATION-BLANKET MAKER (asbestos & min. wool)	3	4	3	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 7	3	5	190	0Y
8599-602	ORNAMENTAL-DESIGN CASTER (misc. prod. fab., n.e.c.)	3	3	3	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I	3	5	139	0Y

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8599-606	REFLECTIVE-SIGN FABRICATOR (misc. prod. fab., n.e.c.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	M 47	I	3	5	19	0Y
8599-610	EMBOSSER OPERATOR (paper prod.; textile)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 4	I 5	3	4	91	Y0
8599-614	SIZING-MACHINE OPERATOR (non-metal min. prod., n.e.c.)	4	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I 7	3	4	19	0Y
8599-618	PICTURE FRAMER (misc. prod. fab., n.e.c.)	4	4	4	4	4	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	3	4	13	2Y
8599-622	ABRASIVE-BELT JOINER (non-metal min. prod., n.e.c.)	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	M 4	I 6	2	4	913	2Y
8599-626	AWNING MAKER, CANVAS (garment & fabric)	4	4	4	<u>4</u>	4	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 47	I	3	3	913	2Y
8599-630	CHALK-BOARD-AND-BULLETIN BOARD FABRICATOR (misc. prod. fab., n.e.c.)	4	4	4	<u>4</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 4	I	3	3	913	2Y
8599-634	DRAPERY INSTALLER (ret. trade)	4	4	4	<u>4</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 24	I	2	3	13	2Y
8599-638	LUGGAGE FINISHER (leather goods)	4	4	4	<u>4</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I	2	3	139	23Y
8599-642	MIRROR ASSEMBLER (glass)	4	4	4	<u>4</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 4	I	2	3	139	23Y
8599-646	MIRROR FRAMER (glass)	4	4	5	<u>4</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5	M 47	I	2	3	139	23Y
8599-650	SURFACE PREPARER, PRE-FINISHING (any ind.)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	M 47	I 7	2	3	139	2Y
8599-654	MATCH-HEAD DIPPER (misc. prod. fab., n.e.c.)	4	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 47	I	2	3	319	23Y
8599-658	CASE ASSEMBLER AND FINISHER (leather goods)	4	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L 47	I	2	2	13	23Y
8599-662	CONCRETE-POLE MAKER (cement, stone & clay)	4	4	4	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	4	5	H 4	I 457	2	2	139	23Y
8599-666	COVERED-BUTTON MAKER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5	L 4	I	2	2	319	23Y
8599-670	STAMP-PAD MAKER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	31	23
8599-674	UMBRELLA FINISHER (misc. prod. fab., n.e.c.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	4	5	L 47	I	2	2	139	23Y
Miscellaneous Product Assembling Occupations, n.e.c.																		
8599-690	ASSEMBLY-PRESS SET-UP OPERATOR (any ind.)	<u>3</u>	3	3	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 6	3	5	910	Y0
8599-694	RIVETING-MACHINE OPERATOR (any ind.)	<u>3</u>	4	3	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	H 47	I 56	3	4	91	Y0
8599-698	MANNEQUIN ASSEMBLER (misc. prod. fab., n.e.c.)	4	4	4	<u>4</u>	4	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 4	I	3	4	139	0Y
8599-702	ASSEMBLER, PRODUCTION (any ind.)	4	4	4	<u>3</u>	4	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	M 47	I	2	3	319	23Y
8599-704	ASSEMBLY-PRESS OPERATOR (any ind.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	L 47	I 6	2	3	319	23Y
8599-706	ASSEMBLER, SMALL PRODUCTS (any ind.)	4	4	5	<u>4</u>	4	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	L 47	I	2	2	319	23Y
8599-710	HAND RIVETER (any ind.)	4	4	5	<u>4</u>	4	5	<u>3</u>	<u>4</u>	<u>4</u>	5	5	L 4	I 5	2	2	319	23Y
8599-714	POWER-SCREWDRIVER OPERATOR (any ind.)	4	4	4	<u>4</u>	4	4	<u>3</u>	<u>3</u>	<u>4</u>	4	5	L 4	I 5	2	2	319	23Y
8599-718	RIVETING-MACHINE TENDER (any ind.)	4	4	5	4	<u>4</u>	5	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	5	L 47	I 5	2	2	319	23Y
8599-722	STAPLING-MACHINE TENDER (any ind.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5	L 4	I	2	2	319	23Y

GROUP 8599B

		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
OCCUPATIONAL TITLES		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Miscellaneous Product Repairing Occupations, n.e.c.</i>																		
8599-742	SURVIVAL-EQUIPMENT REPAIRMAN (bus. serv.; gov. serv.)	<u>4</u>	4	3	4	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I	3	4	319	20Y
8599-746	REPAIRMAN, METAL FURNITURE (furn.)	4	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 347	I 567	2	4	139	2Y
8599-750	CIGARETTE-LIGHTER REPAIRMAN (misc. prod. fab., n.e.c.)	4	4	5	<u>4</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>4</u>	5	5	S 47	I	2	3	13	2Y
8599-754	BELT REPAIRMAN (mech. equip., n.e.c.)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	H 4	I 5.	2	3	31	2Y
8599-758	PEN AND PENCIL REPAIRMAN (misc. prod. fab., n.e.c.)	4	4	5	4	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>4</u>	5	5	L 4	I	2	3	31	23Y
8599-762	SCAFFOLD REPAIRMAN (struct., plate & ornamental)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	H 4	I 67	2	3	31	23
8599-766	UMBRELLA REPAIRMAN (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>4</u>	5	5	L 4	I	2	3	31	23
8599-770	DATE-STAMP ASSEMBLER AND REPAIRER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>4</u>	5	5	L 47	I	2	2	31	23
<i>Miscellaneous Cutting and Slitting Machine Occupations, n.e.c.</i>																		
8599-790	SLITTING-MACHINE OPERATOR (any ind.)	3	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 347	I 56	3	4	91	Y0
8599-794	CUTTER OPERATOR (any ind.)	4	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	M 347	I 56	3	4	91	Y0
8599-798	DIE-CUTTING-MACHINE OPERATOR (any ind.)	4	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	4	M 47	I 5	3	4	91	Y0
8599-802	CUTTER, MACHINE (any ind.)	4	4	4	<u>4</u>	4	4	<u>3</u>	4	<u>3</u>	4	5	L 47	I 56	2	3	319	23Y
8599-806	TUBE-CUTTING-MACHINE TENDER (misc. prod. fab., n.e.c.; paper prod.)	4	4	4	4	4	4	<u>4</u>	4	<u>3</u>	5	5	L 4	I 56	2	2	319	23Y
8599-810	SLITTING-MACHINE-OPERATOR HELPER (any ind.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	4	5	M 347	I 56	2	2	319	23
<i>Miscellaneous Machine Operating, Tending and Feeding Occupations, n.e.c.</i>																		
8599-830	BOTTLECAP-SEAL-MACHINE SETTER (misc. prod. fab., n.e.c.)	<u>3</u>	4	3	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	M 47	I 5	3	6	91	Y0
8599-834	PENCIL-MACHINE SET-UP MAN (misc. prod. fab., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	4	H 347	I 56	3	6	910	Y0
8599-838	EMBOSSING-IMPRINTING-PRESS OPERATOR (any ind.)	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	5	L 47	I 56	3	6	91	Y0
8599-842	INSULATION-PANEL MAKER (asbestos & min. wool)	3	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	4	5	H 47	I 567	3	5	91	Y0
8599-844	TABLET-COATING-MACHINE OPERATOR (pharm. & toil.)	3	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	4	M 47	I	3	4	91	Y0
8599-846	CIGARETTE-FILTER-MACHINE TENDER (tobacco)	4	4	4	<u>4</u>	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I 5	2	4	319	23Y
8599-850	DESIGN-AND-LETTERING STAMPER (any ind.)	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	L 47	I	2	3	319	23Y
8599-854	RETUBULATOR (glass)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	L 47	I 6	2	3	319	23Y
8599-858	COMPRESSOR, TABLET (any ind.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	5	M 47	I 56	2	3	319	20Y
8599-862	CORN-PLASTER-MACHINE TENDER (pharm. & toil.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I 5	2	3	319	23Y
8599-864	MARKER (any ind.)	4	4	4	4	4	4	<u>3</u>	4	<u>3</u>	5	4	L 47	I	2	2	31	23

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C					
8599-866	ABRASIVE-WHEEL BINDER (non-metal. min. prod., n.e.c.)	4	4	5	4	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	H 4	I 5	2	2	319 23Y
8599-870	BOTTLECAP-SEAL-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I 5	2	2	319 23Y
8599-874	CARPET-TAPE-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	5	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I	2	2	319 23Y
8599-878	HEADING-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I 5	2	2	319 23Y
8599-882	INSULATION-TUBE WINDER (asbestos & min. wool)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	M 47	I 56	2	2	319 23Y
8599-886	PENCIL-ERASER-MAKING-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	5	5	M 4	I 5	2	2	319 23Y
8599-890	PENCIL-MAKING-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I 5	2	2	319 23
8599-894	RIBBON INKER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	319 23
8599-898	RIBBON-LOOPING-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	319 23
8599-902	RIBBON WINDER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	4	S 47	I	2	2	319 23
8599-906	STAKING-MACHINE TENDER (plastic prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	S 4	I 7	2	2	319 23
8599-910	TWISTING-MACHINE TENDER (misc. prod. fab., n.e.c.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	319 23
8599-914	VACUUM-BOTTLE-SILVER-MACHINE TENDER (glass)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I	2	2	319 23Y
8599-918	WINDOW-SHADE MOUNTER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	L 4	I	2	2	319 23Y
8599-922	BUTTON-SORTING-MACHINE FEEDER (misc. prod. fab., n.e.c.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	L 4	I	2	2	319 23
8599-926	PENCIL-TIPPING-MACHINE FEEDER (misc. prod. fab., n.e.c.)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I 5	2	2	319 23
8599-930	TUBULATING-MACHINE FEEDER (glass)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I 6	2	2	319 23
8599-934	VACUUM-BOTTLE-EXHAUST-MACHINE FEEDER (glass)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 47	I 6	2	2	319 23
8599-936	IMPREGNATOR, HAND (misc. prod. fab., n.e.c.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	5	L 4	I 7	2	2	31 23Y
8599-938	WINDER, SUTURE MATERIAL (pharm. & toil.)	4	4	5	4	<u>4</u>	5	4	4	<u>4</u>	<u>4</u>	5	S 47	I	2	2	319 23Y
8599-942	STRINGING-MACHINE FEEDER (paper prod.)	4	4	5	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	5	L 4	I	2	2	319 23

EXCAVATING, GRADING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with removing earth materials from excavations, filling, grading and levelling for roadbuilding and other construction work, and dredging irrigation ditches, canals and marine channels. Worker functions include: driving and operating heavy construction machinery to excavate, move, load or grade earth and similar material; manipulating air hammers and hand tools to break up material or shape walls and bottom of tranches; handling sections of pipe, tow lines, foundation timbers and construction tools; comparing levels of fill, grades, and depths of excavation to marking guides on anchor poles or stakes. Work activities include: actuating levers, pedals and other controls to manoeuvre construction machinery and equipment; drilling post holes, or shallow wells for water; boring horizontal holes in the earth or under highways, canals or other obstructions to lay pipes; installing and removing lengths of pipe; driving stakes in ground and setting up trim lines or templates to indicate grade or level; and providing support to operators of construction machinery.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8711-110	HEAVY-EQUIPMENT OPERATOR (construction; mining & quarrying)	3	6	8711-142	POWER-SHOVEL OPERATOR (any ind.)	3	4
8711-114	SHIELD RUNNER (construction)	3	5	8711-146	ROAD-GRADER OPERATOR (construction)	3	4
8711-118	HORIZONTAL-EARTH-BORING-MACHINE OPERATOR (construction)	3	4	8711-150	SCRAPER OPERATOR (construction)	3	4
8711-122	MUCKING-MACHINE OPERATOR (construction)	3	4	8711-154	TOWER-EXCAVATOR OPERATOR (construction)	3	4
8711-126	BULLDOZER OPERATOR (any ind.)	3	4	8711-158	TRENCH-DIGGING-MACHINE OPERATOR (construction)	3	4
8711-130	DRAGLINE OPERATOR (construction; mining & quarrying)	3	4	8711-162	UTILITY-TRACTOR OPERATOR (construction)	3	4
8711-134	DREDGE OPERATOR (construction)	3	4	8711-166	AIR-LOCK TENDER (construction)	3	4
8711-138	ELEVATING-SCRAPER OPERATOR (construction)	3	4	8711-174	LOADER OPERATOR (any ind.)	3	4 *
				8711-178	POST-HOLE DRILLER (construction)	3	3

B

		GED	SVP			GED	SVP
8711-170	BATTERBOARD SETTER (construction)	3	4	8711-190	EXCAVATION TRIMMER (construction)	2	2
8711-182	FINE-GRADE MAN (construction)	2	3	8711-194	SHALLOW-WELL DIGGER (construction)	2	2
8711-186	DECKHAND, SUCTION DREDGE (construction)	2	3	8711-198	HORIZONTAL-EARTH-BORING-MACHINE OPERATOR, HELPER (construction)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	4	4	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 467	O 567	3	6-3	913	Y2	
	4		5				<u>4</u>											
B	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5	M-H.2347	O 456	3-2	4-2	13	23Y	
			4			4			<u>3</u>								23	

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply the techniques of excavating, grading and dredging earth materials, and to acquire considerable skill to operate bulldozers, dredges, power shovels, or other heavy construction equipment;
- spatial perception to interpret drawings or specifications and to manoeuvre construction equipment to avoid other moving or stationary objects;
- eye-hand co-ordination and manual dexterity to connect hoses and belts, adjust, repair and replace parts, and clean, lubricate and refuel equipment;
- eye-hand-foot co-ordination to simultaneously actuate hand levers, foot pedals and steering devices;
- capacity to recognize sounds of machinery which may indicate faulty operation, and to hear instructions and warnings;
- visual acuity, near and far, and depth perception to read gauges on instrument panel and to manipulate mobile equipment safely at work sites;
- adaptability to dusts from sand and gravel and fumes from diesel engines.

B

- learning ability to understand and follow instructions or specifications concerning manual duties related to excavating, grading and dredging operations;
- eye-hand co-ordination and manual dexterity to align, assemble and secure sections of pipe, operate winches and hoists, place and tighten jack screws, or handle mooring or tow lines;
- eye-hand-foot co-ordination to climb in and out of excavations or trenches, or to maintain balance while performing deckhand duties aboard dredge;
- capacity to stoop, kneel or crouch when using pick and shovel, laying foundation timbers or painting dredges;
- visual acuity, near and far, and depth perception to read specifications, to level batterboards or set up trimlines and templates;
- adaptability to working in contact with water on dredges or at the bottom of excavations or shallow wells.

All workers in this chapter also require:

- physical capacity to perform medium to very heavy work and to reach for and handle a variety of tools and equipment;
- adaptability to working in wind, rain or snow and in proximity to noisy construction equipment;
- adaptability to hazardous situations such as working in well holes or deep trenches and operating mobile equipment on rough or irregular terrain.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten years of general education;
- for some occupations, a two-year or more company sponsored apprenticeship program, which normally provides for regular periods of full-time attendance at trade schools and which in some areas may be provincially regulated, or a similar form of on-the-job training;

- completion of provincial examination requirements in some provinces.
- for other occupations, six months to one year of on-the-job training and related experience.

B

- eight to nine years of general education;
- one to six months of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in this chapter may advance to occupations requiring higher skills within their individual cluster or from Cluster B to A. Experienced workers with supervisory potential may also advance to 8710-110 FOREMAN, EXCAVATING, GRADING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

With limited additional training, experienced workers in this chapter may transfer to other occupations requiring similar basic skills within the chapter or to appropriate occupations in other chapters such as 7717, MINING AND QUARRYING; CUTTING, HANDLING AND LOADING OCCUPATIONS; and 8713, PAVING, SURFACING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving:

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Additionally, for Cluster A:

- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

PAVING, SURFACING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with laying concrete to form road-beds or sub-surface structures for roads, highways, streets, sidewalks, airports and parking lots, and applying asphalt, gravel, concrete and other surfacing materials. Worker functions include: driving, operating and tending construction machines to spread, level, compact and smooth surfacing materials, mix and pour concrete, and spray tar, asphalt, road oils and emulsions on roads and highways; comparing depth, grade, level and smoothness of surfaced areas to specified standards; and manipulating construction tools, metal road and curbing forms, wire mesh and other materials and equipment. Work activities include: selecting and fitting appropriate attachments to surfacing machines; refueling, cleaning and servicing equipment; laying wire mesh to reinforce concrete; placing and spreading asphalt by hand; and covering earthen surfaces with stones to prevent soil erosion.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8713-110	CONCRETE-PAVING-MACHINE OPERATOR (construction)	3	5	8713-122	MOBILE-TAMPER OPERATOR (construction)	3	4
8713-114	ASPHALT-PAVING-MACHINE OPERATOR (construction)	3	4	8713-126	ROAD-ROLLER OPERATOR (construction)	3	4
8713-118	CONCRETE-MIXER-OPERATOR, HIGHWAY (construction)	3	4	8713-130	SOIL-STABILIZING-MACHINE OPERATOR (construction)	3	4
				8713-134	ROAD-PLANER OPERATOR (construction)	3	3

B

		GED	SVP			GED	SVP
8713-138	ROAD-FORM, SETTER, METAL (construction)	2	4	8713-166	RIP-RAP PLACER (construction)	2	2
8713-146	POWER-CURBER TACKLAYER (construction)	2	3	8713-178	CONCRETE-MIXER-OPERATOR HELPER, HIGHWAY (construction)	2	2
8713-162	REINFORCING-WIRE-MESH WORKER (construction)	2	2	8713-182	ASPHALT LAYER, ROAD (construction)	2	2

C

		GED	SVP			GED	SVP
8713-142	CONCRETE-GROOVING-MACHINE OPERATOR (construction)	2	3	8713-158	TAMPER OPERATOR (construction)	2	2
8713-150	POWER-CURBER TENDER (construction)	2	3	8713-170	ROAD-SPRAY-TRUCK TENDER (construction)	2	2
8713-154	ROLLER-COMPACTOR OPERATOR (construction)	2	2	8713-174	STONE-SPREADER TENDER (construction)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3 4	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 47	O 5	3	5-3	913	2Y 23Y	
B	4	4	5 4	4	4	5	<u>4</u> <u>3</u>	4	<u>3</u> <u>4</u>	4	5	M-H 347	O	2	4-2	13	23Y	
C	4	4	5	4	4	5	<u>4</u>	4	<u>3</u> 4	4	5	M 47	O 57	2	3-2	931	23Y	

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand paving techniques and the characteristics of surfacing materials and to acquire considerable skill needed to operate large road-surfacing machines;
- spatial perception to determine the relative position of other moving or stationary objects in order to avoid accidents;
- eye-hand-finger co-ordination to connect supply hoses, move levers and turn handwheels or to refuel machines;
- manual dexterity to skilfully use hand tools to clean, service or repair machines and attachments;
- eye-hand-foot co-ordination to simultaneously operate levers, pedals and steering devices;
- visual acuity, near and far, and depth perception to steer and accurately position large road-surfacing equipment.

B

- learning ability to understand and apply routine instructions involved in setting road forms, laying track and wire mesh or performing other manual road-surfacing activities;
- eye-hand co-ordination and manual dexterity to cut wire mesh, lubricate equipment or to fasten forms, mesh or track;
- visual acuity, near and far, and depth perception to use carpenter's level and measuring tape, or to smooth and level surfaces;

- ability to stoop, kneel or crouch while working in awkward positions.

C

- learning ability to understand and follow road-surfacing equipment operating or tending procedures;
- eye-hand co-ordination to guide machines over joints, cracks or surfaces, to start motors and move levers and to position stones on slopes or terrace to prevent soil erosion;
- manual dexterity to use hand tools to prepare equipment, make minor repairs, or clean and lubricate machines;
- visual acuity, near and far, and depth perception to accurately guide machines or monitor gauges and instruments;
- adaptability to fumes and odours from tar, asphalt and road oils and dusts from sand and gravel.

All workers in this chapter also require:

- physical capacity to perform medium to heavy work to handle a variety of objects such as tools, wheelbarrows, shovels, water hoses, concrete pipe and pneumatic drills;
- adaptability to work situations involving exposure to extreme weather conditions such as rain, snow and wind, and to considerable noise from road-surfacing machinery, jackhammers or power-assisted-walking equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

- eight to ten years of general education;

- one month to one year of on-the-job training and related experience, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training workers in this chapter may advance to other occupations within the chapter. Experienced workers with supervisory potential may also advance to 8710-114 FOREMAN, PAVING, SURFACING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations within the chapter, or with limited additional training, to appropriate occupations requiring similar basic skills in Minor Group 878/879, OTHER CONSTRUCTION TRADES OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Additionally, for Clusters A and C:

- non-social work carried on in relation to machines, processes and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instructions, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

RAILWAY SECTIONMEN AND TRACKMEN

WORK PERFORMED

This chapter includes occupations concerned with laying, aligning, inspecting and repairing tracks and roadbeds of subways, and street, mine, industrial and regular railways. Worker functions include: driving and operating machines such as ballast regulators, tampers, snow blowers and ballast cleaners; manipulating and handling equipment and tools and special devices to work, move and place materials such as rails, ballast and ties; and comparing results of maintenance or repair activities to specified standards. Work activities include: moving levers and depressing pedals to start, stop and control the movement of self-propelled machines or vehicles; laying and repairing track; repairing railway-track switches and grinding switch points and frogs to ensure smooth and safe operation of rolling stock; patrolling and inspecting designated area of railroad track; and servicing and maintaining mechanical rail-lubricators and railroad-switch lamps.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8715-110	BALLAST-REGULATOR OPERATOR (rail trans.)	3	5	8715-122	TRACK-MOVING-MACHINE OPERATOR (rail trans.)	3	4
8715-114	TAMPER-ALIGNER OPERATOR (rail trans.)	3	5	8715-130	BALLAST-CLEANING-MACHINE OPERATOR (rail trans.)	3	3
8715-118	RAILWAY-TRACK-TAMPER OPERATOR (rail trans.)	3	4	8715-134	SNOW-BLOWER OPERATOR (rail trans.)	3	3
				8715-138	TRACK-BROOM OPERATOR (rail trans.)	3	3

B

		GED	SVP			GED	SVP
8715-126	SWITCH REPAIRMAN (rail trans.)	3	4	8715-154	RAIL-LUBRICATOR REPAIRMAN (rail trans.)	2	2
8715-142	TRACK REPAIRMAN (rail trans.)	3	3	8715-158	LAMP TRIMMER (rail trans.)	2	2
8715-146	RAILWAY-TRACK GRINDER (rail trans.)	2	3				

C

		GED	SVP
8715-150	TRACK WALKER (rail trans.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	L-M 47	I-O 5	3	5-3	913	2Y	
	4			<u>4</u>						4								
B	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	M-VH 347	O	3-2	4-2	193	2Y	
							<u>3</u>		<u>4</u>								2Y3	
C	4	4	5	4	4	4	4	4	4	4	5	L 67	O	2	3	31	26Y3	

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand procedures and follow instructions relating to the operation of specialized track and roadbed construction and maintenance equipment;
- spatial perception to judge distances and relative positions when driving self-propelled vehicles or machines or to visualize adjustments required during actual operations;
- eye-hand co-ordination and manual dexterity to move controls rapidly and accurately and use hand tools;
- eye-hand-foot co-ordination to operate equipment equipped with levers and pedals;
- strength to perform light to medium work often involving considerable physical exertion on hand and foot controls;
- visual acuity both near and far and depth perception to observe track or roadbed instruments when operating machines;
- adaptability to working outside where there may be little protection from extremes of temperature;
- adaptability to conditions in which there is exposure to noise and vibration, either constant or intermittent, posing a possible risk of injury to sense of hearing.

B

- learning ability to understand detailed but uninvolved instructions and to apply them while performing a variety of tasks;

- eye-hand co-ordination and manual dexterity to operate controls on portable equipment and to use hand tools, power tools and special work aids;
- strength to perform medium to very heavy work requiring the lifting of objects weighing in excess of one hundred pounds and the use of spike pullers, shovels and sledge hammers;
- capacity to stop, kneel or crouch when repairing, positioning or grinding railway tracks and switches;
- near visual acuity and good depth perception when inspecting track or operating rail-grinding machines;
- adaptability to constant or intermittent noises;
- adaptability to working outside where there is little or no protection from extremes of temperature.

C

- learning ability to understand simple instructions and apply them to routine tasks;
- form perception to detect flaws in rails, ties, plates, switches, or other parts, when patrolling railway tracks;
- good hearing to avoid mishaps with on-coming trains or other equipment;
- visual acuity, depth perception and accommodation to inspect tracks, switches and roadbed;
- adaptability to outside conditions where there is little protection from extremes of temperature.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- seven to ten years of general education;
- one month to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in this chapter may advance to higher skilled occupations within the chapter. Those with supervisory potential may advance to 8710-118 FOREMAN, RAILWAY SECTIONMEN AND TRACKMEN. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some workers in this chapter may transfer to occupations requiring similar basic skills within the chapter, or to other occupations in excavating and grading work.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- routine, concrete and organized activities.

Additionally, for Clusters A and B;

- non-social activities, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

Additionally, for Cluster C:

- working alone and apart in physical isolation from others;
- doing things only under specific instruction, allowing little room for independent action or judgment in solving job problems.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: EXCAVATING, GRADING AND PAVING

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in excavating and grading earth materials, and in paving, surfacing and related activities. The primary worker function is: handling materials, tools and implements such as shovels, rakes, brooms, tampers and hammers to perform routine manual tasks. Work activities include: sweeping pavement base preparatory to laying asphalt surface; hand tamping freshly-laid asphalt in places inaccessible to road roller; clearing brush, rocks and other foreign material at work site; shovelling excavated material onto conveyor or truck for removal from site; directing traffic around construction work; shovelling muck from discharge end of dredge pipes; and assisting other construction workers in the performance of their duties.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8718-110	LABOURER, BITUMINOUS PAVING (construction)	1	2	8718-122	SHEET-PILE-HAMMER-MAN HELPER (construction)	1	2
8718-114	LABOURER, CONCRETE PAVING (construction)	1	2	8718-126	FLAGMAN (construction)	1	1
8718-118	LABOURER, EXCAVATION (construction)	1	2	8718-130	LABOURER, SHORE DREDGING (construction)	1	1
				8718-134	SHALLOW-WELL DIGGER HELPER (construction)	1	1

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	5	4	4	5	4	4	<u>4</u>	<u>4</u>	5	H 23456	O 4567	1	2-1	31	23

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply instructions given by foremen and excavating, grading and paving machine operators;
- manual dexterity to move hands and arms freely when working with shovels, rakes and scrapers in spreading asphalt and concrete;
- eye-hand-foot co-ordination to assist in placing and operating pneumatic hammers when setting sheet piling around excavation sites;
- strength to perform heavy work requiring the lifting of a maximum of one hundred pounds and the frequent lifting, moving or carrying of objects weighing up to fifty pounds;
- capacity to ascend or descend ladders, scaffolding or ramps while maintaining balance to prevent falling or slipping;

- capacity to stoop, kneel or crouch when working in excavations, clearing surfaces or clearing discharge ends of dredge pipes;
- good hearing to receive information through oral communication or to detect sounds such as sirens, whistles or claxons;
- adaptability to working outside in conditions where there is usually little protection against extremes of climate;
- adaptability to constant or intermittent noise sufficient to cause possible injury to the sense of hearing;
- adaptability to hazardous conditions such as cave-ins where there is risk of bodily injury or possible death;
- adaptability to atmospheric conditions such as dust, smoke and odours.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- six years of general education;
- on-the-job training ranging from a short demonstration to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

With additional training, some workers in this chapter may advance to appropriate occupations in Chapter 8711, EXCAVATING, GRADING AND RELATED OCCUPATIONS.

Transfer

Workers in this chapter may transfer to other occupations requiring similar basic skills within this chapter, or to occupations in labouring and elemental work in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures and sequences;
- doing things only under specific instructions allowing little or no room for independent action or judgment in working out job problems.

EXCAVATING, GRADING, PAVING AND RELATED OCCUPATIONS, N.E.C.

This chapter includes occupations, not elsewhere classified, concerned with activities related to excavating, grading and paving, such as operating pile-drivers and pneumatic-hammers, performing duties in support of pile-driving, excavating ground to install septic tanks, and installing sheet piling to prevent cave-ins.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8719-110	PILE-DRIVER OPERATOR (construction)	3	4	4	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 47	O 5	3	4	91	2Y
8719-114	SEPTIC-SYSTEM INSTALLER (construction)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 34567	O	3	4	91	2Y0
8719-118	PILE-DRIVER WINCHMAN (construction)	3	4	4	<u>3</u>	4	5	<u>4</u>	4	<u>3</u>	4	5	M 347	O 5	3	4	19	2Y
8719-122	LEADSMAN, PILE-DRIVING (construction)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	<u>3</u>	5	VH 24567	O 56	3	3	19	2Y
8719-126	LOFTSMAN, PILE-DRIVING (construction)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>4</u>	<u>3</u>	5	H 247	O 56	2	3	31	23Y
8719-130	NOZZLEMAN, PILE-DRIVING (construction)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	4	5	M 24567	O 5	2	3	31	23
8719-134	SHEET-PILE-HAMMER MAN (construction)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	H 2456	O 56	2	2	31	23
8719-138	GROUNDMAN, PILE-DRIVING (construction)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	VH 2347	O 56	2	2	31	23
8719-142	PNEUMATIC-HAMMER OPERATOR (construction)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	VH 234	B 567	2	2	31	23

ELECTRICAL POWER LINEMEN AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with constructing and maintaining power lines and related equipment used to transmit and distribute electrical energy. Worker functions include: working to precise tolerances and levels of safety when installing and repairing power lines; compiling information from specifications or visual observations to determine appropriate work procedures; and analyzing test data to locate and identify equipment failures. Work activities include: erecting wooden poles and steel towers to support transmission lines; fitting transformers, lightning arrestors, switches and other accessories; stringing and splicing overhead cables and wires; installing underground and underwater conduit and cable systems; testing electrical-transmission systems for voltage fluctuations, improper connections and other defects; and repairing or replacing defective lines, cables, poles, auxiliary equipment and hardware to restore power.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8731-110	SERVICE LINEMAN (elec. power)	4	8	8731-122	CABLE MAN (elec. power)	4	7
8731-114	LINEMAN, REPAIR (elec. power)	4	7	8731-126	LINEMAN, STREET RAILWAY	4	6
8731-118	LINEMAN (elec. power)	4	7		(r.r. trans.)		

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	3	3	<u>3</u>	3	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	4	M 23467	O-B 6	4	8-6	910	0Y8
		4		4		<u>2</u>		<u>2</u>	<u>3</u>		H 234567					

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply a knowledge of electricity and construction and maintenance procedures, and reasoning ability to diagnose causes of failure and determine the most effective steps needed to restore power;
- spatial perception to visualize the desired results of repair or construction work from drawings and specifications, and the proper functioning of parts or equipment forming power-line systems;
- eye-hand co-ordination, finger and manual dexterity to handle tools, splice wires and install or replace parts;
- eye-hand-foot co-ordination to balance and work at heights on poles, towers or equipment while fastening crossarms, wires and fixtures or making repairs;
- strength to perform heavy work requiring the lifting and carrying of heavy tools and equipment weighing in excess of fifty pounds;

- agility to climb poles and transmission towers;
- physical capacity to stoop, crouch or crawl while working in confined spaces such as underground vaults or ducts;
- capacity to extend arms in a variety of positions and use tools while holding or fastening parts into place;
- good speaking and hearing ability to communicate over considerable distances, for example, from ground level to top of transmission towers;
- visual acuity to see distant objects and for close-up work such as examining defective equipment;
- colour vision to distinguish various colour-coded wires and cables;
- good physical condition and capacity to withstand exposure to extremes in weather when working outside;
- adaptability to working in the presence of potential hazards such as falls when climbing poles and towers and possible shock from high-voltage electric wires.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- ten to twelve years of general education;

- a four to five-year company sponsored apprenticeship program, or a similar form of on-the-job training.
- for 8731-126 LINEMAN, STREET RAILWAY, two to three years of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers with supervisory potential may advance to 8730-114 FOREMAN, ELECTRICAL-POWER LINEMEN AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

With limited additional training, workers in this chapter may transfer to appropriate occupations requiring similar skills in Chapters 8736, INSPECTING AND TESTING OCCUPATIONS: ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING; and 8739, ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to machines and techniques;
- dealing with things and objects;
- work leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set tolerances and standards of workmanship;
- performing adequately under stress, as in emergencies involving climbing poles, towers or other facilities, at night or during extreme weather conditions to repair break-downs in high-voltage transmission equipment.

CONSTRUCTION ELECTRICIANS AND REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with installing wiring and associated equipment in buildings, houses and ships for the distribution of electrical power and making repairs to such electrical installations. Worker functions include: compiling information from drawings and interpreting specifications to determine materials needed and to plan sequence of installation; analyzing test data to assess repair requirements; and skilfully manipulating tools and equipment to attain precise standards of workmanship. Work activities include: installing power distribution systems; connecting lighting fixtures, conduit, junction boxes, circuit-protecting devices and associated equipment; and testing and repairing electrical installations.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8733-110	ELECTRICIAN, SHIPYARD (ship & boat bldg.)	4	8	8733-122	ELECTRICIAN (construction)	4	7
8733-118	COMPLAINT SERVICEMEN (elec. power)	4	7	8733-130	ELECTRIC METERMAN (elec. power)	4	7

B

		GED	SVP
8733-142	ELECTRICIAN HELPER, SHIPYARD (ship & boat bldg.)	3	3

N.B. Occupations 8733-114 AIR-CONDITIONING, MECHANIC, COMMERCIAL (mech equip., n.e.c.), 8733-134 INSTALLER-REPAIRMAN, EVAPORATIVE COOLER (mech. equip., n.e.c.) and 8733-138 AIR-CONDITIONING-MECHANIC HELPER, COMMERCIAL (mech., equip., n.e.c.) have been transferred, for Volume II purposes to Chapter 8799, OTHER CONSTRUCTION TRADES OCCUPATIONS, N.E.C.; and occupation 8733-126 CABLE REPAIRMAN (telecom.) to Chapter 8735, WIRE COMMUNICATIONS AND RELATED EQUIPMENT INSTALLING AND REPAIRING OCCUPATIONS.

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	3	4		LM 2347	I-B 6	4	8-7	910	Y0
				<u>2</u>						4								
B	4	4	4	<u>4</u>	4	5	<u>4</u>	<u>4</u>	<u>3</u>	3	4		M 2347	I 6	3	3	139	2Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

Workers in Cluster A

- learning ability to understand the principles of electricity and the specifications, instructions and techniques required to install and repair wiring and associated equipment, and reasoning ability to plan activities and interpret building and safety codes;
- spatial perception to visualize the arrangement, function and relationship of electrical wiring and equipment from building drawings, wiring diagrams or other specifications;
- form perception to detect loose connections, broken cables, corrosion, defective insulation or other defects;

- eye-hand-finger co-ordination to install and repair wiring, switch boxes, panel boards, meters or other accessories;
- finger dexterity to quickly and accurately move fingers when cutting, connecting, soldering or insulating joints;
- manual dexterity to manipulate test equipment and a variety of hand and power tools.

Electrician Helpers, Shipyard

- learning ability to understand the principles of electricity and to apply them to assist in the installation and repair of wiring, equipment and fixtures aboard ships in dockyard;
- spatial perception to comprehend drawings and wiring diagrams and relate physical components to them;

CHAPTER 8733

- eye-hand finger co-ordination and finger dexterity to measure, cut and thread conduits and remove insulation from wires;
- manual dexterity to skilfully use hand tools to fabricate conduit support brackets and to secure wire in cable trays.

All workers in this chapter require:

- physical capacity to perform light to medium work and to extend the arms and hands to position and secure wire;
- agility to climb and maintain balance on poles, ladders and work

- platforms and to stoop, kneel and crouch to work in awkward positions;
- near visual acuity to read gauges, instruments and measuring devices;
- good colour vision to recognize colour-coded wires or cables;
- adaptability to work situations which may involve injuries from falls from poles or ladders and electrical shock from high voltage equipment;
- for some workers in Cluster A, adaptability to outside work involving exposure to seasonal weather conditions.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten to twelve years of general education;
- a four to five-year apprenticeship program, usually provincially regulated, and may provide for regular periods of full-time attendance at a provincial trade school;

- completion of provincial certification requirements; or
- for 8733-130 ELECTRIC METERMAN, one to three years of on-the-job training.

B

- eight to ten years of general education;
- three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, 8733-142 ELECTRICIAN, HELPER, SHIPYARD may advance to 8733-110 ELECTRICIAN, SHIPYARD in Cluster A. Experienced workers in Cluster A with supervisory potential may advance to 8730-110 FOREMAN, CONSTRUCTION ELECTRICIANS AND REPAIRMEN. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Qualified workers who acquire knowledge of costing and estimating may become self-employed as contractors.

Transfer

Transfer possibilities for qualified workers in this chapter are many. With limited additional training, workers may transfer to occupations requiring similar basic skills in, for example, maintenance and repair of equipment in industrial establishments, quality control work, or electrical work in manufacturing. Appropriate occupations may be found in Chapters 8531, ELECTRICAL EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS; 8533, ELECTRICAL AND RELATED EQUIPMENT INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.; 8536, INSPECTING AND TESTING OCCUPATIONS: FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING, ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT; 8736, INSPECTING AND TESTING OCCUPATIONS: ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING; and 8739, ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to machines and techniques;
- dealing with things and objects;
- Work leading to satisfaction from tangible results.

Temperaments

- the precise attainment of set limits, tolerances and standards as required for installation of wiring in accordance with building codes;
- the evaluation of information against measurable or verifiable criteria.

Electrician Helpers, Shipyard

Interests

- dealing with things and objects;
- routine, concrete and organized work;
- non-social work carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

WIRE COMMUNICATIONS AND RELATED EQUIPMENT INSTALLING AND REPAIRING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with erecting, installing, servicing and repairing overhead and underground telephone and telegraph lines and related equipment in central installations or place of use. Worker functions include: analyzing defects in circuits and equipment to ascertain extent of damage and repairs required; compiling data from specifications, diagrams and drawings to determine equipment layout and installation procedures; working to close tolerances when fitting and adjusting parts; manipulating hand and power tools to install, repair and maintain telephones and switchboards; and comparing results of electrical tests to specified standards. Work activities include: testing equipment and circuits using electronic or electrical testing devices; disassembling units or components to replace, clean, adjust or repair parts; climbing poles and ladders to replace or rearrange faulty wiring; and calibrating instruments and equipment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8735-110	CENTRAL-OFFICE-EQUIPMENT REPAIRMAN (telecom.)	4	7	8735-138	LINEMAN (telecom.)	4	7
8735-114	COMBINATION MAN (telecom.)	4	7	8735-142	PROTECTIVE-SIGNAL SERVICEMAN (telecom.)	4	6
8735-118	COMMUNICATIONS-EQUIPMENT MAN (electric. equip.; telecom.)	4	7	8735-146	REPAIRMAN, SHOP (telecom.)	4	6
8735-122	PRIVATE-BRANCH-EXCHANGE REPAIRMAN (telecom.)	4	7	8735-150	SUBMARINE-CABLE-EQUIPMENT MECHANIC (telecom.)	4	6
8735-126	STATION REPAIRMAN (telecom.)	4	7	8735-154	CENTRAL-OFFICE-EQUIPMENT INSTALLER (telecom.)	4	6
8735-130	SIGNAL MAINTAINER (rail trans.)	4	7	8735-158	PRIVATE-BRANCH-EXCHANGE INSTALLER (telecom.)	4	6
8735-134	TELEGRAPH-EQUIPMENT REPAIRMAN (telecom.)	4	7	8735-162	STATION INSTALLER (telecom.)	4	6
8733-126T	CABLE REPAIRMAN (telecom.)	4	7	8735-166	TELECOMMUNICATIONS-EQUIPMENT INSTALLER (telecom.)	4	6

B

		GED	SVP			GED	SVP
8735-170	CABLE-TELEVISION SERVICEMAN (telecom.)	3	5	8735-182	FRAMEMAN (telecom.)	3	5
8735-174	FACILITIES MAN (telecom.)	3	5	8735-186	PROTECTIVE-SIGNAL-SERVICEMAN HELPER (telecom.)	3	4
8735-178	CABLE MAN (telecom.)	3	5				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	3	M 234567	B 6	4	7-6	190	0Y1
			3	<u>2</u>						4	4						
B	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>2</u>	4	M 234567	B 6	3	5-4	19	0Y
			3	<u>4</u>	<u>4</u>		<u>4</u>	<u>3</u>		<u>4</u>	3						
										<u>3</u>							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply the principles of electrical theory to the installation, repair and adjustment of electrical circuits and equipment;
- spatial perception to visualize circuits, equipment functions and layout from drawings and specifications;
- form perception to note defective electrical connections and worn or damaged parts;
- eye-hand-finger co-ordination and manual dexterity to use hand tools, power tools and test meters;
- finger dexterity to manipulate small objects with fingers and to bend, position or splice small wires;

- eye-hand-foot co-ordination when using ladders or climbing poles to install wiring, insulators and circuit breakers;
- strength to perform medium work requiring the lifting of objects weighing up to fifty pounds;
- capacity to stoop, kneel, crouch or crawl when working in confined spaces and underground vaults;
- capacity to speak clearly and good hearing for giving or receiving information or instructions;
- near visual acuity to read gauges and other testing devices, and to assemble or join small parts or wires;
- colour vision to recognize various colours used in wire-coding;
- adaptability to working in situations where there is definite risk of bodily injury from falls or electric shock.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- one to four years of on-the-job training supplemented by employers' courses.

B

- ten to eleven years of general education;
- three months to one year of on-the-job training supplemented by employers' courses.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and some additional training, workers in Cluster B may advance to higher skilled occupations in A. Experienced workers in both clusters may advance to 8730-118 FOREMAN, TELEPHONE AND TELEGRAPH INSTALLATION. See Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some workers may transfer to occupations requiring similar skills within their own cluster. With limited additional training, workers may also transfer to appropriate occupations in Chapter 8736, INSPECTING AND TESTING OCCUPATIONS: ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLATION AND REPAIRING, for example, 8736-114 CABLE TESTER, 8736-130 EXCHANGE TESTER, and 8736-138 TERMINAL AND REPEATER TESTER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving:

Interests

- dealing with things and objects;
- non-social work carried on in relation to equipment and techniques.

Additionally, for A:

- work leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria such as analyzing electrical circuits to locate defects;
- the precise attainment of set limits, tolerances or standards.

Additionally, for A:

- a variety of duties often characterized by frequent change.

INSPECTING AND TESTING OCCUPATIONS: ELECTRICAL POWER, LIGHTING, AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the erection, installation and repair of equipment or wiring used to generate, transmit or distribute electrical power or telephone or telegraph communication signals. Worker functions include: compiling information from specifications, reports and complaints; analyzing inspection or test data to ensure equipment is functioning safely and properly, or to locate malfunctions; working to close tolerances when inspecting, testing or calibrating equipment; and manipulating and operating test apparatus. Work activities include: inspecting new or modified wiring in buildings for conformance to building codes; patrolling overhead power lines to detect damaged or defective equipment; testing electrical cables, meters and equipment for continuity, loading, accuracy or other factors; locating malfunctions in telegraph or telephone lines, repeaters and terminals; and preparing reports on findings and corrective action required.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8736-110	ELECTRICAL-WIRING INSPECTOR (construction; elec. power)	4	8	8736-134	ELECTRICAL-TESTING TECHNICIAN (elec. power)	4	6
8736-114	CABLE TESTER (telecom.)	4	7	8736-138	TERMINAL AND REPEATER TESTER (telecom.)	4	6
8736-118	PATROLMAN (elec. power)	4	7	8736-142	TRANSMISSION TESTER (telecom.)	4	6
8736-122	ELECTRIC-METER TESTER (elec. power)	4	7	8736-146	TAMPERING INSPECTOR (elec. power)	4	6
8736-126	TESTER AND REGULATOR (telecom.)	4	7	8736-150	VOLTAGE TESTER (elec. power)	4	6
8736-130	EXCHANGE TESTER (telecom.)	4	6	8736-154	WATT-HOUR-METER TESTER (elec. power)	3	6

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	3	5	4	L-M	24567	I-B	6	4-3	8-6
		4			3	<u>4</u>	<u>3</u>	4	4						91	0Y
									3							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to acquire a thorough knowledge of electrical equipment inspection and testing principles and procedures, and to apply this knowledge to interpret specifications and regulations and to detect and determine causes of defects and appropriate corrective action;
- spatial perception to interpret test instrument and meter displays or readings and relate the function and operation of electrical components to them;
- form perception to detect powerline, circuitry or meter defects and irregularities such as corrosion, storm damage, loose connections, tampering or fire hazards;
- eye-hand co-ordination and finger dexterity to use ammeters, voltmeters, or other electrical test instruments and to manipulate small objects in confined work spaces;
- manual dexterity to move the hands skilfully when using hand tools to repair, replace and service repeaters, carriers, insulators, relays or switches;
- eye-hand-foot co-ordination and agility for workers who are required to climb and maintain balance on poles or towers;
- physical capacity to perform light to medium work, and to reach for and handle test equipment, tools and electrical components;
- capacity to speak clearly and receive information accurately over telephones or other communications equipment;
- near visual acuity to accurately read gauges, dials and meters;
- colour vision to distinguish colour coded wires or cables;
- adaptability to working in conditions which may involve exposure to wind, rain or snow and to injuries from falls from poles or towers and electrical shock from high voltage equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- ten to twelve years of general education;
- a two to four-year company sponsored apprenticeship program or a similar form of on-the-job training and related experience;
- for 8736-110 ELECTRICAL-WIRING INSPECTOR, a four to five-year apprenticeship program, usually provincially regulated and one or more years of experience as a qualified worker on electrical installations and building wiring.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, some workers in this chapter may advance to occupations requiring similar skills within the chapter. Those with experience and supervisory potential may also advance to appropriate occupations in Volume I, Unit Group 8730, FOREMEN: ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Because of specialization, transfer possibilities for most workers in this chapter are limited, however, with limited additional training some workers may transfer to appropriate occupations requiring similar basic skills in Chapters 8731, ELECTRICAL POWER LINEMEN AND RELATED OCCUPATIONS; and 8739 ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried on in relation to systems, techniques and machines;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards, such as inspecting and testing installations for conformance to rigid standards of operation and safety.

ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with erecting, installing and repairing electrical power, lighting and wire communications equipment. Worker functions include: working precisely with test instruments to locate sources of electrical failure or malfunction; analyzing data from tests and circuit diagrams; compiling information for the servicing and repair of circuit breakers, regulators, relays, meters and transformers; manipulating hand and power tools to remove, dismantle, clean, examine, test, reassemble and install electrical equipment; and handling shovels, saws and shears to erect utility poles or clear right-of-way for power lines. Work activities include: servicing street lights; splicing multi-conductor cables; and erecting preassembled neon or plastic signs.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8739-110	ELECTRICIAN, POWERHOUSE (elec. power)	4	7	8739-134	POWER-TRANSFORMER REPAIRMAN (elec. power)	4	7
8739-114	CIRCUIT-BREAKER MECHANIC (elec. power)	4	7	8739-138	TRANSFORMER REPAIRMAN (elec. power)	4	7
8739-118	ELECTRICIAN, SUBSTATION (elec. power)	4	7	8739-142	STREET-LIGHT SERVICEMAN (elec. power)	4	6
8739-122	ELECTRIC-METER REPAIRMAN (elec. power)	4	7	8739-146	SALVAGE REPAIRMAN (elec. power)	4	6
8739-126	RELAY TEST AND MAINTENANCE MAN (elec. power)	4	7	8739-150	ELECTRIC-SIGN ERECTOR (construction)	3	6
8739-130	CABLE SPLICER (elec. power; telecom.)	4	7	8739-154	VOLTAGE-REGULATOR MAINTENANCE MAN (elec. power)	3	6

B

		GED	SVP			GED	SVP
8739-158	CABLE-SPLICER HELPER (elec. power; telecom.)	3	5	8739-166	GROUNDMAN (elec. power; telecom.)	2	3
8739-162	ELECTRICAL HELPER (construction elec. power)	2	3	8739-170	TREE TRIMMER (elec. power; telecom.)	2	3
				8739-174	STEEL-POST INSTALLER (elec. power)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	L-M 2347	B 67	4-3	7-6	190	0Y
			4							<u>3</u>							
B	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>3</u>	5	M-H 234	B 6	3-2	5-2	31	*23Y
			4						<u>4</u>	<u>4</u>	4						
									<u>2</u>								

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply the principles of electricity, and reasoning ability to relate technical knowledge to installation and repair problems;
- spatial perception to visualize the arrangement, function and relationship of electrical parts and equipment represented in circuit diagrams or blueprints;
- form perception to visually examine meters, transformers or relays for physical defects such as corrosion, cracked weldments or worn and warped parts;
- eye-hand co-ordination and finger dexterity to make accurate and rapid movements when using ammeters, voltmeters, micrometers or other precision instruments;
- manual dexterity to move the hands easily and skilfully when splicing or wrapping cables or soldering and connecting wires;
- near visual acuity to read gauges, dials and circuit diagrams;
- colour vision to distinguish colour-coded wires or cables.

B

- learning ability to acquire and apply a knowledge of basic electrical

theory and to understand a variety of uninvolved oral or written instructions;

- spatial perception to judge relative distances from lines or installations when trimming trees and clearing brush from utility right-of-ways;
- eye-hand-finger co-ordination and manual dexterity to use chainsaws to fell trees, or hand tools to attach guy wires or secure steel posts.

All workers in these clusters also require:

- eye-hand-foot co-ordination and agility to climb, maintain balance and work on ladders, poles, towers or scaffolds when servicing street lights, erecting signs, splicing cables or trimming trees;
- physical capacity to perform light to heavy work and to reach for and handle a variety of objects such as hand tools, chainsaws and testing devices;
- capacity to stoop, bend, kneel or crouch to dig post holes, move supplies or service electrical equipment in hard to reach positions;
- adaptability to work situations involving exposure to extreme weather conditions and to possible injuries due to falls from towers, poles or trees, and accidental contact with high voltages in equipment.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;

- a two to four year company sponsored apprenticeship program or a similar form of on-the-job training.

B

- eight to ten years of general education;
- up to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, some workers in Cluster B may advance to other occupations requiring higher skills in Cluster A. Workers in Cluster A may advance to appropriate quality-control occupations in Chapter 8736, INSPECTING AND TESTING OCCUPATIONS: ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING. Experienced workers with supervisory potential may advance to appropriate foreman occupations in Volume I, Unit Group 8730, FOREMEN: ELECTRICAL POWER, LIGHTING AND WIRE COMMUNICATIONS EQUIPMENT ERECTING, INSTALLING AND REPAIRING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

With limited additional training, workers in this chapter may transfer to other occupations requiring similar basic skills within their individual cluster. Those who acquire the necessary qualifications and experience may also transfer to appropriate occupations in Chapters 8531, ELECTRICAL EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS and 8733, CONSTRUCTION ELECTRICIANS AND REPAIRMEN.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A**Interests**

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques;
- activities leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

B**Interests**

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

CARPENTERS AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with constructing, erecting, and repairing wooden structures such as building frameworks, concrete forms and scaffolding, and installing floors, trim and fixtures in buildings. Worker functions include: working to close tolerances when layout out, cutting and shaping parts; compiling data from drawings, sketches or building plans and specifications to determine type and amount of lumber, plywood and other materials to be used; and manipulating hand tools, power tools and measuring instruments to cut and shape wood. Work activities include: marking cutting or assembly lines on materials; sawing, grooving, planing or sanding materials by hand or machine; assembling or fastening parts using nails, screws, dowel pins or glue; erecting structures; and installing doors, windows and other prefabricated items.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8781-110	CARPENTER (construction)	4	7	8781-114	CARPENTER, MAINTENANCE (construction)	3	7
				8781-118	CARPENTER, ROUGH (construction)	3	6

B

		GED	SVP
8781-122	CARPENTER HELPER (construction)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>3</u>	3	4	<u>3</u>	3	<u>3</u>	<u>3</u>	4		M 2347	B 6	4-3	7-6	190	0Y
		4									5							
B	4	4	4	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5		M 2347	B 6	2	3	13	23Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply the basic principles of construction carpentry used in making wood structures and fixtures, and ability to select and use proper materials and tools;
- numerical ability to lay out and accurately mark materials for cutting, using rule and framing square and to calculate quantities of materials;
- spatial perception to visualize the finished products and the location of various integral parts from drawings and specifications.

Carpenter Helpers

- learning ability to understand and apply the basic principles of carpentry;
- spatial perception to visualize objects of two or three dimensions and the positioning of members to form the overall structure.

All workers in this chapter also require:

- eye-hand-finger co-ordination and manual dexterity to accurately and quickly measure and mark material for cutting and to use hand and power tools to cut materials and to fasten materials with nails and screws;
- eye-hand-foot co-ordination to carry and lift building tools and materials while ascending, working and maintaining balance on ladders, planks or scaffolding;
- capacity to perform medium work requiring the frequent lifting of tools, materials and assemblies weighing up to fifty pounds;
- capacity to stoop, kneel and crouch while handling materials or using tools;
- visual acuity, both near and far and depth perception;
- adaptability to working both inside under controlled environmental conditions and outside where there is likely to be no effective protection against extremes of temperature;
- adaptability to conditions where there is a definite risk of bodily injury.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;
- a four-year apprenticeship program, usually provincially regulated,

- which provides for periods of full-time attendance at provincial trade schools, or a similar form of on-the-job training;
- completion of provincial certification requirements.
- for 8781-122 CARPENTER HELPER, one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, Carpenters Rough and Carpenters Helpers may advance to occupations requiring higher skills within this chapter. Experienced workers with supervisory potential may advance to 8780-114 FOREMAN, CARPENTERS AND RELATED WORKERS or to the appropriate occupation in Volume I, Unit Group 8540, FOREMEN: FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Carpenters who acquire knowledge of business practices may also become self-employed as sub-contractors or as owners of their own establishments.

Transfer

Transfer possibilities for workers in this chapter may be to other occupations within the chapter or to appropriate occupations requiring similar basic skills in other chapters, for example, 8541 CABINET AND WOOD-FURNITURE MAKERS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques;
- work leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

Carpenter Helpers

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instructions, allowing little or no room for independent action or judgment in working out job problems;
- the attainment of set limits, tolerances or standards.

BRICK AND STONE MASONS AND TILE SETTERS

WORK PERFORMED

This chapter includes occupations concerned with preparing and laying brick, stone, concrete block, tile, marble and refractory and related materials. Worker functions include: working to close tolerances when laying out work and shaping, setting and aligning masonry; compiling information from drawings and specifications to determine layout, materials and appropriate construction or repair techniques; and manipulating materials, trowels, levels, plum bob, lines and other work aids. Work activities include: examining materials for specified colour, size and shape; measuring and marking locations for the laying of masonry; mixing and spreading mortar or adhesives; laying brick, stone, tile or refractory materials and placing and tamping them into alignment; filling and caulking joints; cleaning masonry surfaces; cleaning chimneys; removing old masonry materials and rebuilding designated areas; and directing helpers in the setting and supplying of material.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8782-110	BRICKLAYER (construction)	4	7	8782-134	MARBLE SETTER (construction)	3	6
8782-114	BRICKLAYER, REFRACTORY BRICK (construction)	4	7	8782-138	MASONRY-SILO ERECTOR (construction)	3	6
8782-118	REFRACTORY-BRICK REPAIRMAN (construction)	4	6	8782-142	STONE SETTER (construction)	3	6
8782-122	BRICK-SMOKESTACK BUILDER AND REPAIRMAN (construction)	3	7	8782-146	KILN-MAINTENANCE MAN (cement, stone & clay)	3	5
8782-126	STONEMASON (construction)	3	7	8782-150	MOSAIC-TILE WORKER (construction)	3	5
8782-130	TILE SETTER (construction)	3	7	8782-154	SIMULATED-STONE INSTALLER (construction)	3	5

B

		GED	SVP			GED	SVP
8782-158	CHIMNEY CLEANER AND REPAIRMAN (construction)	3	5	8782-182	BRICKLAYER HELPER, REFRACTORY BRICK (construction)	2	3
8782-162	OVEN REPAIRMAN (construction)	3	5	8782-186	CUPOLA RELINER, SPRAY (iron & steel; non-ferrous metal)	2	3
8782-166	MONUMENT SETTER (construction)	3	4	8782-190	BRICKLAYER HELPER (construction)	2	3
8782-170	CUPOLA REPAIRMAN (iron & steel; non-ferrous metal)	3	4	8782-194	TILE-SETTER HELPER (construction)	2	3
8782-174	LADLE LINER (iron & steel; non- ferrous metal)	2	4	8782-198	MARBLE-SETTER HELPER (construction)	2	2
8782-178	MASONRY POINTER AND CAULKER (construction)	2	4				

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	4	4	M-H 2347	B 56	4-3	7-5	190	Y0
			<u>4</u>	<u>4</u>		5	"	3		<u>3</u>	5						
B	4	4	4	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	4	5	M-VH 2347	B 56	3-2	5-2	319	20Y
	3		5	<u>3</u>						<u>3</u>	4						23Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply the principles governing the use of masonry in construction and to acquire the skills needed to lay bricks, concrete blocks, tiles or similar building materials;
- numerical ability to make accurate calculations when deciding on quantity, size and shape of brick, stone or tile required, or when marking guidelines and reference points or measuring distances;
- spatial perception to visualize from drawings and specifications the structure to be built, and the positioning of materials and sequence of operations required to form the structure;
- eye-hand-finger co-ordination and manual dexterity to accurately and rapidly lay or cut brick, stone, blocks or tile.

B

- learning ability to understand and follow masonry repair and construction procedures, either within well established guidelines or as a helper;
- spatial perception to visualize the desired or original structure from plans or instructions to retain or restore contours or shape;

- eye-hand-finger co-ordination and manual dexterity to mix mortar, fireclay, grout or cement, fill or caulk spaces, cracks and joints, and to use trowels, chisels, hammers as well as other hand or power tools.

All workers in this chapter also require:

- eye-hand-foot co-ordination and agility to maintain balance on ladders or scaffolds while simultaneously performing manual operations involving visual co-ordination.
- physical capacity to extend the arms and hands and perform medium to very heavy work;
- agility to work in crouching, stooping, kneeling or other awkward positions;
- near and far visual acuity and depth perception to detect cracks, read measuring devices and verify alignments;
- good colour vision to distinguish colour differences in tile, stone or brick;
- adaptability to inside and outside work while exposed to seasonal weather conditions, proximity to noise from construction equipment, and the presence of potential hazards which may result in injuries from falls, falling objects or cuts.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- for most occupations, a three to four-year apprenticeship program, usually provincially regulated, or similar on-the-job training;

B

- completion of provincial examination requirements.
- for other occupations, one to two years of on-the-job training.
- eight to ten years of general education;
- on-the-job training from one month to one year, depending on the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in this chapter may advance to other occupations within the chapter. Experienced workers may advance to 8796-122 MASONRY INSPECTOR and those with supervisory potential to 8780-110 FOREMAN, BRICK AND STONE MASONS AND TILE SETTERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some workers in this chapter may transfer to occupations requiring similar skills within the chapter. With limited additional training, workers may also transfer to occupations requiring similar basic skills in other chapters, for example Chapter 8783, CONCRETE FINISHING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects;
- non-social work carried on in relation to processes, machines and techniques;
- work leading to satisfaction from tangible results.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

B

Interests

- routine, concrete and organized work;
- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

CONCRETE FINISHING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with pouring and casting concrete at construction sites; levelling, smoothing and finishing concrete and similar hard surfaces; and laying and polishing terrazzo. Worker functions include: manipulating trowels, floats, brushes and cement guns, and operating powered vibrating, levelling and polishing tools; tending machines that pump grout or concrete mixtures through hoses or pipelines at work sites; comparing contour, texture or appearance of finished work to acceptable standards; and handling materials and objects used in concrete or cement construction. Work activities include: applying cement, sand, pigment and marble chips to floor, walls and fixtures to attain durable and decorative surfacing; levelling and finishing exposed surfaces of freshly-poured concrete floors, roads, curbs and sidewalks; erecting prefabricated steel forms and associated supports used to mould concrete structures; and applying coatings of stucco, cement, mortar or concrete through a hose to exposed surfaces of buildings or other structures.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8783-110	TERRAZZO WORKER (construction)	3	7	8783-126	STEEL-FORMS SETTER (construction)	3	5
8783-114	CEMENT-GUN NOZZLEMAN (construction)	3	5	8783-130	CONCRETE-STONE FINISHER (cement, stone & clay)	3	5
8783-118	CEMENT MASON, HIGHWAYS AND STREETS (construction)	3	5	8783-134	CONCRETE-GUN-MIXER OPERATOR (construction)	3	4
8783-122	CONCRETE FINISHER (construction)	3	5	8783-142	CONCRETE-FLOAT MAKER (construction)	3	3

B

		GED	SVP			GED	SVP
8783-146	TERRAZZO-WORKER HELPER (construction)	2	4	8783-166	CONCRETE VIBRATOR (construction)	2	2
8783-150	STEEL-FORMS-SETTER HELPER (construction)	2	3	8783-170	PUMP TENDER, CEMENT AND CONCRETE (construction)	2	2
8783-154	GROUTERMAN (construction)	2	3	8783-174	CEMENT-GUN-NOZZLEMAN HELPER (construction)	2	2
8783-158	CEMENT-GUN-MACHINE TENDER (construction)	2	3	8783-178	CONCRETE-FINISHER HELPER (construction)	2	2
8783-162	MOULDMAN, SIMULATED STONE (construction)	2	3				

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	3	4	4	<u>3</u> 4	4	4	<u>3</u> 5	4	<u>3</u>	4	4	M-H 2347	O-B 456	3	7-3	913	Y2	
B	4	4	5 4	4	4	5	<u>4</u> <u>3</u>	4	<u>3</u> <u>4</u>	4	5	M-H 234	O-B 456	2	4-2	139 31	23	

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply the principles and techniques involved in pouring, casting and finishing concrete, terrazzo and similar surfaces, and ability to judge setting times and other characteristics of various cement and concrete mixes;
- eye-hand-finger co-ordination to spray cement mixtures evenly over exposed surfaces of structures, accurately place small marble chips in terrazzo floors and use hand tools to measure and secure concrete forms and supports;
- manual dexterity to use trowels and floats to smooth or finish concrete;
- physical strength and stamina to perform medium to heavy tasks such as operating concrete vibrators and surface-finishing machines, dumping and spreading concrete or erecting steel cement forms;
- capacity to work for prolonged periods while stooping or kneeling when laying or finishing cement surfaces, concrete highways, curbs, sidewalks or terrazzo floors;

- visual acuity to check alignment, placement and form of materials, or to recognize by sight the working characteristics of concrete mixes;
- colour vision to recognize state of concrete mix as indicated by change in colour shade;
- adaptability to working both indoors and outside in seasonal weather conditions and in frequent contact with wet materials;
- adaptability to conditions of sustained high noise levels produced by adjacent construction machinery such as compressors and pumps;
- adaptability to working in the presence of potential injury from hazards such as open scaffolds, falling tools, or dust and unpleasant atmospheric conditions.

Workers in Cluster A also require:

- spatial perception to visualize the three-dimensional nature of completed concrete structures or products from drawings or instructions.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- for 8783-110 TERRAZZO WORKER, 8783-118 CEMENT MASON, HIGHWAYS AND STREETS and 8783-122 CONCRETE FINISHER, a three to four-year apprenticeship program, usually provincially regulated, and which may provide for periods of full-time attendance at provincial trade schools, or a similar form of on-the-job training;

- completion of provincial certification requirements;
- for other occupations in this cluster, one month to one year of on-the-job training.

B

- eight years of general education;
- on-the-job training ranging from a short demonstration for some occupations, to six months for others.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training workers in this chapter may advance to occupations requiring higher skills within their individual cluster or from Cluster B to A. Experienced workers with supervisory potential may advance to 8780-118 FOREMAN, CONCRETE FINISHERS AND RELATED WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Terrazzo Workers, Cement Masons and Concrete Finishers may also become self-employed as sub-contractors or contractors.

Transfer

Transfer possibilities for workers in this chapter may be to occupations requiring similar skills within the chapter or to appropriate occupations in Chapter 8713 PAVING, SURFACING AND RELATED OCCUPATIONS for example, 8713-142 CONCRETE-GROOVING-MACHINE OPERATOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Additionally, for Cluster A:

- non-social work, carried on in relation to processes, machines and techniques.

Temperaments

A

- the precise attainment of set limits, tolerances and standards, to the extent demanded by concrete finishing tasks and similar work;
- repetitive or short cycle operations carried out according to set procedures or sequences.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment such as working in the role of a helper to a tradesman.

PLASTERERS AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with fastening lath to walls and ceilings; and applying plaster, stucco, plasterboard or related materials to interior or exterior building surfaces. Worker functions include: working to precise dimensions when installing lath or applying ornamental or finishing coats of plaster; manipulating sheet materials, hand tools and measuring devices during lathing and dry-wall construction work; and comparing finished work to ensure acceptable standards are met. Work activities include: verifying trueness of corners, walls and ceilings; cutting lath and wiring, nailing, screwing, clipping or stapling lath to framework, ceiling joists and flat concrete surfaces; mixing plaster to desired consistency; erecting trestles and scaffolds; levelling base coat and final coats of plaster; creating decorative textures in final coat; and taping and sanding joints between dry-wall sheets.

LIST OF OCCUPATIONAL TITLES

A					
		GED	SVP		GED SVP
8784-110	PLASTERER, ORNAMENTAL (construction)	4	7	8784-118	PLASTERER, STUCCO (construction) 4 6
8784-114	PLASTERER (construction)	4	6	8784-122	LATHER (construction) 3 6
B					
		GED	SVP		GED SVP
8784-126	DRY-WALL APPLICATOR (construction)	3	5	8784-130	DRY-WALL TAPER (construction) 3 5
				8784-134	DRY-WALL SANDER (construction) 2 2

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>3</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4	M-H 2347	B 67	4-3	7-6	190	Y0
						5		3			5						
B	4	4	4	<u>3</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	L-M 2347	I 7	3-2	5-2	139	2Y3
	3		<u>3</u>	4			<u>4</u>			<u>4</u>							
				5													

APTITUDES AND CAPACITIES

Workers in this chapter require:

- A**
- learning ability to learn and apply the principles and skills of plastering or lathing, to understand the composition and mixing of materials and to interpret drawings and specifications;
 - spatial perception to visualize objects in two or three dimensions represented on architectural drawings;
 - eye-hand-finger co-ordination and manual dexterity to make precise movements with speed, especially with quick-drying finishing operations, when applying plaster to ceilings or shaping plaster cornices and mouldings on buildings;
 - adaptability to inside and outside work activities, to potential hazards such as working on ladders or handling lime, and to irritating atmospheric conditions caused by odours and dusts from plaster materials.

- B**
- learning ability to acquire and apply a thorough knowledge of dry-wall construction;
 - numerical ability for 8786-126 DRY-WALL APPLICATOR to accurately measure area to be covered and to scribe dimensions on wallboard sheets to mark cutting lines;
 - spatial perception to visualize detailed sequence of dry-wall application in order to perform installation activities efficiently;
 - eye-hand-finger co-ordination to position and fit wallboard to walls or ceilings or to accurately position and apply paper tape to blend joints with adjacent surfaces;
 - manual dexterity to skilfully use hammers, trowels, knives, sanders or mixers;
 - adaptability to irritating atmospheric conditions, such as dusts from plasterboard or odours from taping compounds.

All workers in this chapter also require:

- form perception to make visual comparisons of plaster or dry-wall surfaces in order to detect roughness, irregular shapes, holes or cracks;
- eye-hand-foot co-ordination and agility to climb and maintain balance on ladders or scaffolds;

- physical capacity to perform medium to heavy work and to extend the arms and hands in any direction while working on ceilings or walls;
- capacity to stoop, kneel, lean or crouch to apply materials to hard to reach positions;
- visual acuity, near and far, as well as depth perception to judge surface characteristics when applying plaster or dry-wall materials.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- a three to four-year apprenticeship program which may be provincially regulated, or a similar form of on-the-job training;

B

- completion of certification requirements.
- eight to ten years of general education;
- six months to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training and experience, some workers in this chapter may advance to other occupations within the chapter. Those with supervisory potential may advance to 8780-142 FOREMAN, PLASTERERS AND RELATED WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Experienced plasterers may become self-employed as sub-contractors.

Transfer

Transfer possibilities are limited, usually to other occupations within the chapter. With additional training, some workers may transfer to other occupations where there is similarity in the basic skills and materials used, such as those in Chapter 8783, CONCRETE FINISHING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes or techniques.

Additionally,

for Cluster A:

- activities leading to satisfaction from tangible results.

for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria, such as examining specifications and structures and arriving at measurements or estimates of material and labour costs.

B

- repetitive or short cycle operations carried out according to set procedures and sequences as in sanding and smoothing dry-wall joints;
- the precise attainment of tolerances or standards of accuracy when measuring, cutting and applying dry-wall plaster sheeting;
- doing things only under specific instruction, allowing little room for independent action or judgment.

OTHER REQUIREMENTS

Applicants for lathing and plastering occupations should be free from allergies resulting in skin irritations, as some materials used in plaster may irritate sensitive skin.

PAINTERS, PAPERHANGERS AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with applying paint and related materials to interior or exterior surfaces of buildings and other structures; applying wallpaper and fabrics to walls and ceilings; and placing advertising posters on billboards. Worker functions include: working to close tolerances when measuring and laying out work, cutting decorative wall-covering materials, or selecting proper colour shades; manipulating brushes, rollers and spray guns to apply paints or wallpaper sizing; comparing quality of finished work to acceptable standards; and operating spray-painting equipment. Work activities include: erecting ladders, scaffolds and suspended platforms to reach work areas; preparing surfaces for painting and paperhanging by removing old paint or paper, sanding and smoothing rough areas, and repairing plaster surfaces; selecting materials and mixing paints, tints or glues; and pasting and trimming paper for application to walls or outdoor display signs.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8785-110	PAINTER (construction)	3	7	8785-114	PAPERHANGER (construction)	3	6
				8785-118	PAINTER, ROUGH (construction)	3	5

B

		GED	SVP			GED	SVP
8785-122	PAINTER HELPER (construction)	2	3	8785-126	PAVEMENT-STRIPING-MACHINE OPERATOR (construction)	2	2
				8785-130	BILL POSTER (bus. serv.)	2	2

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	4	3	4	<u>3</u>	5	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	L-M 2347	I-B 67	3	7-5	13	Y9
		3	4	3	<u>4</u>	4		4			<u>2</u>						Y92
B	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	<u>3</u>	4	L-M 234	O-B 6	2	3-2	31	23
			4		<u>4</u>	4											

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply painting or paperhanging techniques;
- form perception to observe pertinent detail such as smoothness and texture of surfaces and to determine their suitability for painting or covering with paper or other decorative materials;
- eye-hand-finger co-ordination to make rapid and accurate movements when operating spray guns to apply paint evenly to surfaces or when applying wallpaper;
- manual dexterity to easily and skilfully move hands, arms and particularly the wrists when brushing or rolling paint onto surfaces or positioning wallpaper;
- eye-hand-foot co-ordination to climb and balance on ladders and scaffolds while working at varying heights;
- strength to perform light to medium work requiring frequent lifting and carrying of materials weighing from ten to twenty pounds and lifting of materials weighing up to fifty pounds;

- capacity to work in standing, crouching, stooping or kneeling positions for extended periods, while preparing surfaces for painting or applying paint or wallpaper;
- capacity to work inside or outside, while subject to falls from ladders or scaffolds and exposure to paint fumes, mists and dust.

Workers in Cluster A also require:

- numerical ability for painters and paperhangers who estimate materials and labour costs;
- colour discrimination to distinguish, to a fine degree, similarities or differences in colour or in shades of same colour when mixing or matching paints;
- visual acuity, both near and far, to ensure even application of paints and finishes, sharpness and accuracy of lines and alignment of decorative coverings.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- a three to four-year apprenticeship program, usually provincially regulated, which may provide for regular periods of full-time attendance at a provincial trade school or a similar form of on-the-job training;

- completion of provincial examination requirements.
- for 8785-118 PAINTER, ROUGH on-the-job training ranging from two to six months.

B

- eight years of general education;
- one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in this chapter may advance to other occupations within the chapter. Experienced workers with supervisory potential may advance to 8780-138 FOREMAN, PAINTERS, PAPERHANGERS AND RELATED WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Qualified workers who acquire knowledge of business practices may also become self-employed as contractors.

Transfer

Transfer possibilities are limited, but workers may transfer to other painting and decorating occupations in Chapter 8595, PAINTING AND DECORATING OCCUPATIONS, EXCEPT CONSTRUCTION such as 8595-118 PAINTER, SHIPYARD.

CLUES FOR RELATING APPLICANTS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- routine, concrete and organized tasks.

Temperaments

A

- the precise attainment of set standards;
- the evaluation of information against sensory or judgmental criteria.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent judgment in working out job problems.

INSULATING OCCUPATIONS, CONSTRUCTION

WORK PERFORMED

This chapter includes occupations concerned with insulating buildings and exposed surfaces of heating and cooling equipment to prevent or reduce the passage of heat, cold or sound. Worker functions include: manipulating hand and power tools to cut, fit and fasten various types of insulating material into position, and operating controls of insulating equipment to direct flow of materials into spaces or recesses; and comparing applied materials to acceptable standards. Work activities include: injecting or spraying foamed insulation into building walls or onto structures; covering exposed surfaces of pipes, steam generators, vats, ducts and similar items with cork, asbestos or other insulating materials; fastening fibreglass batts and foamed slabs into position in buildings, refrigerated rooms or vehicles; and blowing loose insulation between walls, ceilings and partitions.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8786-110	FOAMED-INSULATION APPLICATOR (construction)	3	6	8786-122	REFRIGERATION AND AIR- CONDITIONING-EQUIPMENT INSULATOR (construction)	3	6
8786-114	BOILER AND PIPE INSULATOR (construction)	3	6	8786-126	INSULATION HOSEMAN (construction)	2	3
8786-118	BUILDING INSULATOR (construction)	3	6				

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	4	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	<u>4</u>	5		M 234	I-B 67	3-2	6-3	193	20Y
3						<u>4</u>			<u>3</u>								20

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the basic principles involved in heat and sound conduction, interpret specifications and drawings and learn the techniques of insulation work;
- spatial perception to visualize the positioning of insulation from drawings and to judge shapes and sizes of insulation materials such as prefabricated sections for covering pipes or other areas;
- eye-hand-finger co-ordination to rapidly and skilfully use hand tools such as knives, scissors, stapling guns and brushes to apply insulation materials;
- manual dexterity to move the hands easily and quickly when placing and fastening insulating blocks and batts or forming asbestos covering around pipes;
- eye-hand-foot co-ordination to apply insulating materials while standing on ladders or narrow platforms;
- physical strength to perform work that occasionally requires lifting and carrying of materials and machines weighing up to fifty pounds;

- agility to climb ladders and ability to balance while working on scaffolds;
- physical capacity to work in crouching, stooping or other awkward positions and to apply insulation in confined areas, or cover pipes in narrow, low-ceiling tunnels or around boilers or refrigeration systems;
- capacity to reach in any direction and handle materials and tools while applying insulation in inaccessible areas;
- adaptability to conditions of varying or extreme temperatures which occur when insulating partially completed buildings or maintaining insulated pipework of refrigeration systems or boilers and steam-heating installations;
- adaptability to potential hazards such as falls from ladders or scaffolds, injury from falling tools or burns from hot pipes;
- adaptability to working conditions where dust or mildly toxic fumes may be present.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to ten years of general education;
- up to four years of apprenticeship, usually employer sponsored but in some areas provincially regulated or a similar form of on-the-job training;

- completion of certification requirements.
- for 8786-126 INSULATION HOSEMAN, three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers with supervisory potential may advance to 8780-130 FOREMAN, INSULATORS. Qualified workers who acquire a knowledge of costing may advance to job estimators or may become self-employed as contractors.

Transfer

Because of specialization transfer is normally limited to other occupations requiring similar skills within the chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to machines and techniques;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the evaluation of information against measurable or verifiable criteria when determining from specifications and drawings, the type and amount of insulation material required for insulating projects.

ROOFING, WATERPROOFING AND RELATED OCCUAPTIONS

WORK PERFORMED

This chapter includes occupations concerned with covering roofs with metal, wood, asphalt, tar, gravel and other materials, and applying waterproofing compounds to surfaces of underground structures. Worker functions include: manipulating hand tools, power tools and equipment to cut, shape, fit and apply covering materials; computing quantities of roofing materials required for jobs by examining drawings, specifications and work sites; and handling supplies, materials and equipment around work area. Work activities include: erecting hoists and scaffolding to raise materials and provide access to roofs; positioning, aligning and securing flashings and shingles, roofing paper, sheet metal and tile to roof surfaces; spreading gravel over hot tar to form final protective coating for asphalt or tar roofs; caulking joints and nail holes to waterproof surfaces; and brushing or spraying waterproofing compounds on surfaces of building foundations, swimming pools, tunnels and other underground structures.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8787-110	ROOFER, METAL (construction)	3	6	8787-118	ROOFER, TAR AND GRAVEL (construction)	3	5
8787-114	ROOFER, SHINGLES (construction)	3	5	8787-122	WATERPROOFER (construction)	3	4

B

		GED	SVP			GED	SVP
8787-126	ROOFER HELPER (construction)	2	3	8787-130	WATERPROOFER HELPER (construction)	2	2

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	4	3	<u>3</u>	4	4	<u>3</u>	3	<u>3</u>	<u>3</u>	4	M 234	O-B 67	3	6-4	190	0Y
	4	3	4	<u>4</u>	<u>3</u>	5	<u>4</u>	4	<u>2</u>	<u>4</u>	5						0Y2
B	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	H 234	O-B 3467	2	3-2	139	23
									3								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- general learning ability to understand and apply roofing and waterproofing techniques and for workers in Cluster A to interpret construction drawings and specifications;
- eye-hand co-ordination to lay and fasten rows of shingles and layers of paper on roof surfaces, to paint or spray waterproofing compound on surfaces and spread tar and gravel on roofs;
- manual dexterity to make placing and turning motions easily and quickly, and to use hand and power tools associated with roofing;
- eye-hand-foot co-ordination to balance on roofs, scaffolds or platforms while laying and securing shingles and metal panels or applying waterproofing and sealing compounds;
- physical strength to perform medium to heavy tasks frequently requiring lifting or carrying bundles of shingles, rolls of roofing and other materials up to ninety pounds in weight;
- agility to climb ladders and work from inclined roof surfaces;

- capacity to work for prolonged periods while stooping, bending or kneeling during the laying and fastening of shingles on large roof expanses;
- adaptability to working in situations where the individual is subject to physical injury by falling or slipping from roofs, ladders and other surfaces.

Additionally,

for Cluster A:

- numerical ability for workers who regularly estimate amounts of materials and costs for each job;
- spatial perception to visualize the complete roof structure from drawings;
- form perception to observe detail in design and shape when laying shingles on roofs in symmetrical or other patterns;

- adaptability to performing work often involving prolonged exposure to extreme weather conditions.

for Cluster B:

- adaptability to working in conditions of dampness, especially for

waterproofers helpers, when spraying sealing compound on underground surfaces;

- adaptability to exposure to heat, and tar and asphalt fumes, while heating pitch and asphalt.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- an apprenticeship program of up to four years duration, which may be provincially regulated and provide periods of full-time attendance at a provincial trade school or a similar form of on-the-job training;

- completion of certification requirements.

- for 8787-122 WATERPROOFER, six months to one year of on-the-job training.

B

- eight years of general education;
- one to three months on on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Helpers in Cluster B may advance to appropriate occupations in Cluster A. Experienced workers with supervisory potential may advance to 8780-154 FOREMAN, ROOFERS AND WATERPROOFERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Those who acquire knowledge of costing may advance to estimators or may become self-employed as contractors.

Transfer

Workers in Cluster B may transfer to occupations requiring similar skills in other construction work, for example, 8799-278 CONSTRUCTION HELPER. Roofers whose work involves sheet metal may find transfer possibilities to some occupations in Chapter 8333, SHEET-METAL WORKERS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations of this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects;
- non-social work carried on in relation to techniques and equipment;
- activities leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as examining damaged and leaking roofs and arriving at judgments concerning proper work sequences and methods required for repair;
- the precise attainment of set limits, tolerances and standards.

B

Interests

- dealing with things and objects;
- routine, concrete and organized work;
- non-social work performed in relation to processes and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things under specific instructions, with little latitude for independent judgment in solving job problems.

PIPEFITTING, PLUMBING AND RELATED OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations concerned with installing and repairing pipelines, plumbing systems and related equipment for distributing water, gas, steam, air, waste or other materials. Worker functions include: working to close tolerances when measuring and fitting piping, valves and fixtures for new installations or repairs; manipulating hand and power tools to cut, thread, solder and caulk various types of pipes and fittings; compiling information from building plans, specifications and on-site inspections to determine layout, plumbing materials, equipment and labour required; and comparing completed work with specified standards. Work activities include: measuring, marking, cutting, threading and bending pipe; cutting openings in structures to accommodate piping; assembling piping and joining piping to fixtures; cementing, soldering, welding or caulking joints; repairing or replacing unserviceable pipes and plumbing; and testing plumbing and piping installations for leaks.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8791-110	PIPE FITTER (construction)	4	8	8791-126	STEAM-MAIN SERVICEMAN (utilities, n.e.c.)	3	6
8791-114	PLUMBER (construction)	4	8	8791-130	GAS-MAIN AND LINE FITTER (construction; utilities, n.e.c.)	3	6
8791-118	PIPE FITTER, WELDING (construction)	4	8	8791-134	MAINTENANCE MAN, SEWER AND WATER MAINS (utilities, n.e.c.; water works)	3	6
8791-122	GAS SERVICEMAN (utilities, n.e.c.)	4	7				

B

		GED	SVP			GED	SVP
8791-138	PIPE LAYER (construction)	3	5	8791-146	WATER-METER INSTALLER (water works)	3	3
8791-142	GAS-METER INSTALLER (utilities, n.e.c.)	3	4	8791-150	GAS-SERVICEMAN HELPER (utilities, n.e.c.)	2	4

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>4</u>	4	<u>3</u>	3	<u>3</u>	<u>3</u>	4	M-H 2347	B 467	4-3	8-6	190	0Y1	
		4	4					4		<u>4</u>	5					19		
B	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	4	5	M-H 34	B 46	3-2	5-3	19	Y02	
					<u>3</u>		<u>4</u>			3								

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply lay-out, installation and joining techniques for various types of piping and plumbing systems;
- spatial perception to visualize plumbing and piping layouts from building plans, detailed drawings, work orders and oral instructions;
- form perception to discern pertinent detail when threading and assembling pipes, valves, fittings and fixtures;
- eye-hand-finger co-ordination to make precise movements quickly when cutting, threading, bending and joining pipe and fixtures;

- manual dexterity to move the hands easily and skilfully when assembling plumbing such as meters and pipes;
- strength to perform medium to heavy work requiring frequent lifting of equipment, pipe and fixtures weighing up to fifty pounds, and to raise ladders, or to cut, bend and join piping;
- ability to work in awkward positions;
- near visual acuity for close scrutiny of work, especially when checking for locations and causes of leaks or condition of valve seats and pipe threads;

- adaptability to both inside and outside environment while exposed to wet conditions from adverse weather and leaking plumbing;
- adaptability to physical hazards or injury such as cuts from sharp metal or slipping wrenches, burns from torches, falls from ladders or platforms and odours and fumes from old plumbing.

Workers in Cluster A also require:

- numerical ability for workers who regularly make bills of materials and measure lengths and diameters of pipes and fittings required;
- eye-hand-foot co-ordination to climb into or out of manholes and on ladders or scaffolds;
- agility to climb and balance on ladders and scaffolds.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- eight to ten years of general education;
- for 8791-110 PIPE FITTER, 8791-114 PLUMBER, 8791-118 PIPE FITTER, WELDING and 8791-122 GAS SERVICEMAN, a four to five-year apprenticeship program, usually provincially regulated,

and which provides for periods of full-time attendance at provincial trade schools or a similar form of on-the-job training;

- completion of provincial certification requirements.
- for other occupations in this cluster, one to two years of on-the-job training.

B

- eight to ten years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in this chapter may advance to occupations requiring higher skills within their individual cluster or from Cluster B to A. Experienced workers with supervisory potential may also advance to 8780-146 FOREMAN, PIPE FITTERS, PLUMBERS AND RELATED WORKERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Other workers, such as Plumbers, may become self-employed as sub-contractors or owners of their own establishments.

Transfer

Some workers may advance to other occupations requiring similar skills within their individual cluster, or with limited additional training, to appropriate occupations in other chapters, for example, 8523-130 PIPE FITTER, RAILWAY CAR AND LOCOMOTIVE, 8523-122 PIPE FITTER, TURBINES, 8592-122 PIPE FITTER and 8592-166 PIPE FITTER HELPER.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Additionally, for Cluster A:

- activities leading to satisfaction from tangible results.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- repetitive or short cycle operations carried out according to set procedures or sequences.

STRUCTURAL-METAL ERECTORS

WORK PERFORMED

This chapter includes occupations concerned with positioning and joining prefabricated structural-metal parts by bolting, screwing, riveting or welding, to form or repair completed frameworks or structures for buildings, bridges, tanks or similar works. Worker functions include: working to close tolerances when positioning and aligning girders, plates and other structural parts; manipulating hand and power tools to fasten or join structural members together; and compiling information about quantity, size, shape and location of structural metal to be erected. Worker activities include: laying out reference points and dimensions on metal work; signalling hoist operator to raise and position units; and securing units in place using wrenches, power tools, pneumatic riveters or welding equipment.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8793-110	ORNAMENTAL-AND-MISCELLANEOUS METAL WORKER (construction)	3	7	8793-126	REINFORCING-IRON WORKER (construction)	3	6
8793-114	STRUCTURAL-STEEL ERECTOR (construction)	3	7	8793-130	METAL-BUILDING ASSEMBLER (construction)	3	5
8793-118	TANK-BUILDER (construction)	3	6	8793-142	RECREATION-EQUIPMENT ERECTOR (construction)	3	3

B

		GED	SVP			GED	SVP
8793-134	REVETER, PNEUMATIC (construction; struct., plate & ornam. metal)	3	4	8793-150	ORNAMENTAL-AND-MISCELLANEOUS METAL WORKER HELPER (construction)	2	3
8793-138	RIVETER, PORTABLE PINCH (struct., plate & ornam. metal)	3	4	8793-154	RIVETER HELPER (struct., plate & ornam. metal)	2	3
8793-146	JOIST SETTER, ADJUSTABLE STEEL (construction)	2	3	8793-158	TANK-BUILDER HELPER (construction)	2	2
				8793-162	STRUCTURAL-STEEL-ERECTOR HELPER (construction)	2	2

N.B. Occupation 8793-122 MEASUREMAN (struct., plate & ornam. metal) has been transferred, for Volume II purposes, to Chapter 4151, PRODUCTION CLERKS.

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	3	4	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	5	H 234567	O-B 56	3	7-3	910	0Y8
	4	4	<u>3</u>	<u>4</u>	3	5	<u>4</u>			<u>2</u>						91	0Y2
B	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>2</u>	5	M-H 23467	B 56	3-2	4-2	19	2Y0
			4			4				<u>3</u>						139	23

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand and apply methods and techniques associated with erecting structural steel;

- eye-hand-finger co-ordination and manual dexterity to handle bolts, rivets, drift pins, tools and measuring instruments;
- eye-hand-foot co-ordination to climb ladders and structures and

- balance and walk on narrow walkways during construction operations;
- strength to perform heavy work, requiring lifting and handling of parts and hardware weighing up to one hundred pounds, and torquing nuts and bolts to specified foot-pounds;
- agility to work in awkward positions such as stooping and kneeling while reaching for and handling tools and components during the erection of structural metal;
- ability to give and receive verbal instructions or information against a background of loud, steady noise;
- near visual acuity to measure components and good field of vision to watch for hazards on worksite;

- adaptability to both inside and outside conditions while exposed to noise from the hammering or riveting of metal and to physical hazards such as falls from ladders, platforms or girders;

Additionally for workers in Cluster A:

- numerical ability, for 8793-110 ORNAMENTAL-AND-MISCELLANEOUS METAL WORKER, to measure and mark layouts according to specifications;
- spatial perception to visualize assembly procedures from drawings and to judge relative positions when guiding structural members into position.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to ten years of general education;
- a two to three-year apprenticeship program which may be provincially regulated; or

- two months to four years of on-the-job training, depending on the occupation.

B

- eight to ten years of general education;
- one to six months of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With some additional training, workers in Cluster B may advance to other occupations within the cluster or in Cluster A. Experienced workers with supervisory potential may advance to 8780-150 FOREMAN, STRUCTURAL-METAL ERECTORS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers may transfer to other occupations within the chapter that require similar basic skills or with limited additional training to appropriate occupations in other chapters, for example, 8337-118 BOILER-MAKER, ERECTION AND REPAIR or to 8796-134 STRUCTURAL-STEEL INSPECTOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried on in relation to equipment, tools and techniques;
- dealing with things and objects.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria such as verifying alignment of steel members using plumb bob and level;
- the precise attainment of set limits, tolerances or standards.
- for 8793-114 STRUCTURAL-STEEL ERECTOR and 8793-118 TANK-BUILDER, performing adequately while taking risks on high structures.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

For helpers:

- doing things only under specific instruction, allowing little or no room for independent action or judgment.

GLAZIERS

WORK PERFORMED

This chapter includes occupations concerned with preparing and installing glass in buildings and furniture. Worker functions include: manipulating or handling tools, work aids and materials to cut, transport and install glass; compiling data from drawings and specifications to determine designs, material and dimensional requirements; and working precisely to specified tolerances and colours. Work activities include: tracing and cutting patterns; selecting glass of appropriate size, colour and type; measuring and marking outline or pattern on glass; cutting glass to size and shape; setting glass in frames, mouldings or sashes; bending and joining lead, copper or zinc framework around stained-glass sections; installing mirrors or structural glass on building surfaces; and bolting together parts of prefabricated glass units such as revolving doors and display cases.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8795-110	GLAZIER, STAINED GLASS (construction; glass)	4	7	8795-114	JOINER, STAINED GLASS (construction; glass)	4	7
				8795-118	GLAZIER (construction)	3	7

B

		GED	SVP			GED	SVP
8795-122	GLASS INSTALLER (furn.; metal fab., n.e.c.; woodworking)	3	4	8795-126	GLAZIER HELPER (construction)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	M 47	I-B 6	4-3	7	190	0Y	
			4		<u>3</u>			<u>4</u>	<u>2</u>	5	3	M 2347						
											4							
B	4	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	<u>2</u>	5	M 4	B 6	3-2	4-3	139	23Y	
			5	4						5		H 234						

APTITUDES AND CAPACITIES

Workers in this chapter require:

▲

- learning ability to acquire considerable knowledge of the types and characteristics of glass and to apply this knowledge to prepare and install plate glass, mirrors and stained glass windows;
- spatial perception to visualize assembled stained glass windows or glass units from working drawings or building specifications;
- eye-hand-finger co-ordination to precisely and accurately cut and assemble stained glass windows or to install mirrors or large glass panels in buildings;
- finger dexterity to mark and trace pattern outlines or to apply glazier's compound;
- manual dexterity to skilfully use hacksaws⁴⁴, soldering irons and wrenches to secure windows in frames or sashes;
- colour discrimination when selecting pieces of glass of appropriate

colour, thickness and texture that will yield desired colour shades and highlights;

- near visual acuity to use marking and measuring devices when laying out patterns.

8

- learning ability to understand and apply production glazing techniques, or to acquire the skills needed to assist structural or plate glass installers;
- spatial perception to determine relative position of moving or stationary objects while conveying windows or large sheets of glass;
- eye-hand co-ordination and finger dexterity to insert sealing compound, gaskets or channels in frames, or to accurately cut and drill mouldings;
- manual dexterity to fit and fasten glass in frames, or to attach hinges, handles or other hardware to glass doors.

All workers in this chapter require:

- form perception to detect imperfections in glass panels;
- eye-hand-foot co-ordination and the ability to climb, balance, stoop, kneel or crouch when installing glass in buildings;
- physical capacity to perform medium to heavy work, requiring the handling of materials and units weighing up to one hundred pounds;
- adaptability to inside and outside work conditions, and to possible injuries such as cuts from glass or falls from ladders.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

- | | |
|---|---|
| <p style="text-align: center;">A</p> <ul style="list-style-type: none"> — nine to ten years of general education; — a two to four-year apprenticeship program, usually provincially regulated, or similar form of on-the-job training; | <p style="text-align: center;">B</p> <ul style="list-style-type: none"> — eight to nine years of general education; — one to six months of one-the-job training. |
|---|---|

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training and experience, Glazier Helper in Cluster B may advance to Glazier. Experienced workers with supervisory potential may advance to 8780-126 FOREMAN, GLAZIERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Those who acquire knowledge of business practices may become self-employed as owners of their own establishments.

Transfer

Transfer possibilities for workers in this chapter are limited, but may be between shop glass work and outside installations such as store fronts with plate glass or double-insulated windows. Workers may also transfer to appropriate occupations requiring similar basic skills in other chapters; for example, 8373-170 GLASS POLISHER; 8373-182 GLASS-EDGER TENDER; 8373-162 GROOVE GRINDER; 8376-122 INSPECTOR, GLASS; and 8371-198 GLASS CUTTER, HAND.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Additionally, for Cluster A:

- work leading to satisfaction from tangible results.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria, for example, verifying alignment of stained-glass sections using square and ruler;
- the precise attainment of set limits, tolerances or standards.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instructions, allowing little or no room for independent action or judgment in solving job problems;
- the precise attainment of set limits, tolerances or standards.

INSPECTING AND TESTING OCCUPATIONS, CONSTRUCTION, EXCEPT ELECTRICAL

WORK PERFORMED

This chapter includes occupations concerned with quality-control activities in the construction and maintenance of buildings, bridges, dams, highways, pipelines and other types of construction, except for electric power, light or wire communications. Worker functions include: analyzing data resulting from tests and examinations; compiling information into reports for engineers and project managers; manipulating surveying and measuring instruments; and handling tools and testing devices. Work activities include: conducting periodic examinations of work in progress at various stages of construction; inspecting work and testing materials being used in construction projects to ensure that specifications, building codes and other standards are met; verifying alignment, level and elevation of structures using surveyor's level and transit; examining mechanical installations, instrumentation, valves and fittings in refinery equipment, storage tanks and pipeline distribution systems; testing samples of sand and gravel to determine suitability for use in construction projects; and testing coatings applied to pipelines.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
8796-110	BUILDING-CONSTRUCTION INSPECTOR (construction)	4	8	8796-130	REINFORCED-CONCRETE INSPECTOR (construction)	4	7
8796-114	CONSTRUCTION INSPECTOR (construction)	4	8	8796-134	STRUCTURAL-STEEL INSPECTOR (construction)	4	7
8796-118	HIGHWAY INSPECTOR (construction)	4	8	8796-138	TUNNEL INSPECTOR (construction)	4	7
8796-122	MASONRY INSPECTOR (construction)	4	8	8796-142	LINE-LOCATE MAN (construction)	4	7
8796-126	PIPELINE-CONSTRUCTION INSPECTOR (construction)	4	8	8796-146	REFINERY-EQUIPMENT INSPECTOR (oil & nat. gas)	4	7
				8796-150	STEAM-UTILIZATION INSPECTOR (utilities, n.e.c.)	4	7

B

		GED	SVP			GED	SVP
8796-154	GAS-LEAK SURVEY MAN (utilities, n.e.c.)	3	5	8796-162	GAS-METER INSPECTOR (utilities, n.e.c.)	3	4
8796-158	SAND AND GRAVEL TESTER (construction)	3	4	8796-166	HOLIDAY-DETECTOR OPERATOR (construction)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	3	4	4	4	4	4	L 234567	B 456	4	8-7	715	09Y541	
	<u>3</u>		<u>2</u>		<u>3</u>	4			3	5	5							
											<u>3</u>							
B	<u>3</u>	<u>4</u>	4	4	<u>3</u>	4	4	4	<u>4</u>	5	5	L 47	I-B 67	3	5-4	91	0Y	
					4					4	4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand construction principles and techniques and applicable building codes and standards;

- verbal ability to understand and use technical terminology and express ideas clearly in written or oral form;
- numerical ability to perform arithmetic calculations quickly and accurately;
- spatial ability to visualize eventual size, shape and appearance of finished structures from drawings and specifications;
- form perception to detect defects when examining building workmanship for conformance to standards;
- ability to climb ladders and maintain body equilibrium when walking on narrow or slippery surfaces;
- agility to stoop, kneel, crouch or crawl when inspecting buildings, tunnels or excavations;
- capacity to extend the hands and arms in any direction to seize or grasp handholds when climbing around construction sites and to use measuring devices;
- near visual acuity to read surveying and measuring instruments;

- adaptability to working in environments where there is exposure to a variety of conditions such as water, mud, dirt, dust, noise, vibration and physical hazards;
- for 8796-114 CONSTRUCTION INSPECTOR and 8796-122 MASONRY INSPECTOR, colour discrimination to note slight variances in colours of materials.

B

- learning ability to understand and apply instructions furnished in written or diagrammatic form;
- verbal ability to understand and use technical terminology and to communicate effectively with others, both orally and in writing;
- form perception to detect irregularities or defects in pipelines, terrain and equipment;
- manual dexterity to manipulate tools and test apparatus;
- near visual acuity to read test apparatus;
- adaptability to work situations in which there is exposure to fumes, odours, explosions and other hazards.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;

- several years of experience as a qualified worker in construction and on-the-job training in quality-control and inspection work.

B

- ten to eleven years of general education;
- one month to one year of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Experienced workers with supervisory potential may advance to appropriate occupations in Volume I, Unit Group 8780, FOREMEN, OTHER CONSTRUCTION TRADES OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Because of specialization, transfer possibilities for workers in this chapter are limited, however, with limited additional training, some workers may transfer to other occupations requiring similar basic skills within their individual cluster.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A**Interests**

- scientific and technical work;
- dealing with things and objects;
- work resulting in prestige or the esteem of others.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria;
- the precise attainment of set limits, tolerances or standards;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the direction, control and planning of an entire activity or the activity of others;
- a variety of duties often characterized by frequent change.

B**Interests**

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, OTHER CONSTRUCTION TRADES

WORK PERFORMED

This chapter includes occupations concerned with labouring and other elemental work in the erection, repair or demolition of buildings, bridges, dams, highways, electrical power installations and other works. Worker functions include: handling tools, implements and materials while performing routine tasks; and feeding materials into construction machines. Work activities include: loading and unloading construction trucks; loading rolls of glass fabric, felt paper or other materials onto pipe-wrapping machines; moving materials between work areas to supply other workers; mixing, pouring and spreading concrete; erecting and dismantling scaffolding and hoists; sorting, cleaning and piling salvaged materials; using simple machinery associated with construction, such as chain saws or pneumatic drills; trimming limbs from felled trees; and cutting brush from right-of-way.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
8798-110	PAPER LATCHER (construction)	1	2	8738-110T	LABOURER, ELECTRIC POWER	1	2
8798-114	CONSTRUCTION LABOURER (construction)	1	2		AND WIRE COMMUNICATIONS (elec. power; telecom.)		

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5	H-VH 234	O-B 567	1	2	31	23	
	5							<u>3</u>									

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and carry out simple instructions correctly and apply the elementary training required to perform construction duties;
- eye-hand-finger co-ordination and manual dexterity to load and unload construction materials, sort, clean and pile salvaged material, place barricades around construction sites, rig scaffolds and hoists, trim limbs from felled trees and pile and burn brush;
- eye-hand-foot co-ordination to climb ladders, scaffolding and ramps while conveying or carrying tools and materials;
- capacity to perform heavy to very heavy work requiring the lifting of objects weighing in excess of one hundred pounds and the frequent lifting or carrying of objects weighing in excess of fifty pounds;
- capacity to stoop, kneel, crouch or crawl when working around construction sites, loading trucks and carrying materials to work site;
- capacity to extend the hands and arms in any direction to seize, hold, grasp and turn tools such as shovels, chain saws and pneumatic drills;
- adaptability to working inside under controlled environmental conditions and outside where there is little effective protection against extremes of temperatures;
- adaptability to working in situations where there is constant or intermittent noise which may cause distractions resulting in injuries;
- adaptability to working in situations involving definite risks of bodily injury and possible permanent disability;
- adaptability to working in situations where fumes, odours, dust and poor ventilation are likely to cause bodily discomfort or possible injury.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- six to eight years of general education;
- on-the-job training ranging from a short demonstration to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs and advancement is normally to higher skilled occupations in Minor Group 878/879, **OTHER CONSTRUCTION TRADES OCCUPATIONS**, for workers who demonstrate ability, interest and initiative. Experienced workers may also advance to 8780-134 **FOREMAN, LABOURERS AND OTHER ELEMENTAL WORKERS**. See also Chapter 990, **FOREMEN OCCUPATIONS**, for qualifications profile.

Transfer

Transfer possibilities may be to other occupations within this chapter, or to occupations in labouring and elemental work in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interest in, and dispositions for work involving:

Interests

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures and sequences;
- doing things only under specific instructions, allowing little or no room for independent action or judgment in working out job problems.

ELEVATOR INSTALLERS AND REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with installing, adjusting, servicing and repairing elevators and escalators. Worker functions include: setting up and adjusting elevators and escalators according to factory specifications; analyzing data from drawings, specifications and tests to determine installation or repair requirements; working to close tolerances when laying out assemblies and aligning parts; and manipulating hand tools, power tools and special devices to install and test equipment. Work activities include: mounting motors, controls and associated equipment in buildings; installing elevator cars and cables; testing and adjusting entire assembly; locating and determining causes of malfunctions in electrical, hydraulic, electronic or mechanical systems; and disassembling defective units and repairing or replacing parts.

LIST OF OCCUPATIONAL TITLES

A					
		GED	SVP		
8799-110	ELEVATOR ADJUSTER (construction)	4	8	8799-114	ELEVATOR REPAIRMAN (construction)
				8799-118	ELEVATOR CONSTRUCTOR (construction)
B					
		GED	SVP		
8799-258	ELEVATOR-MECHANIC HELPER (construction)	3	3		

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	3	4	M-H 2347	I 6	4	8-7	910	0Y1
B		4	4	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	3	5	H 2347	I 6	3	3	13	23Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

- A**
- learning ability to acquire and apply a knowledge of the electrical and mechanical principles related to the design, construction, operation and repair of elevators; ability to interpret technical drawings and specifications; and reasoning ability to diagnose and correct causes of malfunctioning controls and equipment;
 - spatial perception to visualize from drawings and specifications, the equipment to be adjusted, repaired or installed and the relative positioning of members and components that form the complete unit;
 - form perception to detect signs of wear or defects in elevator components, to ensure safe operation of elevator systems;
 - eye-hand-finger co-ordination and finger dexterity to connect wiring to electric motors and control panels and to handle tools, test equipment and other work aids;
 - manual dexterity to move hands skilfully when repairing or installing parts or assemblies.

- B**
- learning ability to understand and apply the basic techniques of elevator installation and repair and to carry out instructions;
 - spatial perception to visualize the relative positions of equipment parts and components during the erection of structural sections of elevator systems;
 - eye-hand co-ordination to move structural parts into position for assembly, using hoists, slings, dollies and rollers;
 - manual dexterity to move hands easily when using hand and power tools and other work aids.

Additionally, all workers in this chapter also require:

- physical strength to lift materials and tools weighing up to fifty pounds;
- agility to climb and maintain balance on ladders and work platforms;
- capacity to work in awkward positions such as stooping, kneeling or crouching while reaching for and handling parts and tools;

- near visual acuity to read drawings and specifications or to install and adjust mechanisms and controls;

- colour vision to recognize colour-coded electrical wires and other parts;
- adaptability to situations where there is a possibility of injuries such as falls from heights and burns or shock from electric wires.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter require:

A

- twelve to thirteen years of general education, preferably with emphasis on physics and electrical and electronic theory;

- a three to four-year apprenticeship program, which normally includes periods of on-the-job training at factories of major elevator manufacturers and evening courses sponsored by some employers;
- completion of employer and union examination requirements.

B

- ten years of general education;
- one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training and experience, Elevator-Mechanic Helpers in Cluster B may advance to occupations in A. Experienced workers in Cluster A may advance to the appropriate foreman occupation in the same work-field.

Transfer

With limited additional training, experienced workers in Cluster A may transfer to 8796-110 BUILDING-CONSTRUCTION INSPECTOR or to 1116-138 SAFETY INSPECTOR. Others may transfer to occupations concerned with estimating and sales of elevators or systems.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- work leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

FURNACE INSTALLERS-AND-REPAIRMEN

WORK PERFORMED

This chapter includes occupations concerned with installing, repairing, cleaning and servicing furnaces, oil-burners and related equipment in residential, commercial and industrial establishments. Worker functions include: analyzing data obtained from drawings, specifications or examination at work site, to determine installation or repair requirements; working to close tolerances when laying out, positioning and connecting parts; manipulating hand and power tools; and handling firebrick, insulation, ducting, burners, controls, blowers and other furnace parts. Work activities include: measuring and marking reference points for positioning and erecting heating units; constructing foundations for equipment; installing air ducts, piping, vents and other components; testing and adjusting furnaces; locating and determining cause of trouble in malfunctioning heating units; replacing or repairing defective parts; and cleaning furnaces and related equipment.

LIST OF OCCUPATIONAL TITLES

A					
		GED	SVP		
8799-122	FURNACE INSTALLER-AND-REPAIRMAN (construction)	4	7	8799-130	OIL-BURNER INSTALLER-AND-SERVICEMAN (construction)
B					
		GED	SVP		
8799-298	FURNACE-INSTALLER-AND-REPAIRMAN HELPER (construction)	2	3	8799-302	OIL-BURNER-INSTALLER-AND-SERVICEMAN HELPER (construction)
				8799-318	FURNACE CLEANER (construction)

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	4	M 234	I 6	4	7	910	0Y1
B	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	M-H 34	I	2	3-2	139 31	23Y 23

APTITUDES AND CAPACITIES

Workers in the chapter require:

A

- learning ability to acquire and apply a knowledge of sheet metal ductwork and heating-unit installation and maintenance principles and procedures; reasoning ability to diagnose causes of malfunctioning units and controls; and ability to interpret technical drawings and specifications;
- spatial perception to visualize, from drawings and specifications, the equipment to be installed or repaired and the positioning of parts or components that form the complete unit;
- form perception to visually detect proper adjustment of oil-burners and telltale indications of malfunctioning equipment;

- eye-hand-finger co-ordination and finger dexterity to install sheet-metal ducts, to connect wiring to motors, thermostats and other electrical control devices, and to manipulate small parts;
- manual dexterity to move hands skilfully when repairing or installing parts or assemblies;
- eye-hand-foot co-ordination to climb ladders and maintain balance while positioning and installing overhead ducts and wiring;
- physical strength to perform medium work which frequently involves lifting and carrying tools and material varying in weight from twenty to fifty pounds;
- agility, for some workers, to climb and balance on ladders when installing sheet-metal air ducts;
- capacity to stoop, crouch, kneel or reach while handling tools and parts;

- adaptability to working in situations where workers may sustain injuries such as cuts and burns.

B

- learning ability to understand the basic techniques of furnace or oil burner installation and maintenance, and to carry out instructions;
- eye-hand co-ordination to lift and hold parts into correct position for securing by installer;

- manual dexterity to move the hands easily when using tools and other work aids;
- strength to perform medium to heavy work which frequently involves carrying materials varying in weight from twenty to one hundred pounds;
- ability to stoop, kneel, crouch, or reach while handling parts and tools.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- up to four years of apprenticeship or similar on-the-job training, normally combined with related experience as Helper;

- completion of examination requirements.

B

- eight to ten years of general education;
- two weeks to two months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

Workers in Cluster B who acquire additional training and experience may advance to occupations in Cluster A. Workers in Cluster A with supervisory potential may advance to appropriate foreman occupation in the same work field. Those who acquire knowledge of business practices may also become self-employed and operate their own establishments.

Transfer

Experienced workers in Cluster A may transfer to 1116-138 SAFETY INSPECTOR. Transfer possibilities for workers in Cluster B may be directly related to the amount of experience acquired, but would normally be to appropriate occupations requiring comparable skills in Minor Group 878/879, OTHER CONSTRUCTION TRADES OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following.

A**Interests**

- non-social work carried on in relation to processes and techniques;
- dealing with things and objects;
- work leading to satisfaction from tangible results.

temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B**Interests**

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

Additionally, for helpers:

- the precise attainment of set limits, tolerances or standards.

COMMERCIAL AND INDUSTRIAL AIR-CONDITIONING AND REFRIGERATION MECHANICS

WORK PERFORMED

This chapter includes occupations concerned with installing, servicing and repairing commercial and industrial air-conditioning and refrigeration systems. Worker functions include: working to close tolerances to lay out reference points for installation of system components, and to adjust equipment for optimum performance; manipulating hand and power tools and handling parts to install, repair or replace components such as motors, controls, switches, compressors and water-absorption pads; analyzing data relative to systems' performance to determine nature of malfunctions; and comparing appearance of parts and functional characteristics of components with specified standards to determine flaws and extent of wear. Work activities include: installing or replacing components; drilling holes; screwing, bolting, riveting or welding parts together; cutting, bending, threading and connecting tubing; pumping gas or fluid into systems; and dismantling malfunctioning systems to facilitate repair.

LIST OF OCCUAPTIONAL TITLES

A

		GED	SVP			GED	SVP
8733-114T	AIR-CONDITIONING MECHANIC, COMMERCIAL (mech. equip., n.e.c.)	4	7	8733-134T	INSTALLER-REPAIRMAN, EVAPORATIVE COOLER (mech. equip., n.e.c.)	3	6
8533-118T	REFRIGERATION MECHANIC (mech. equip., n.e.c.)	4	7				

B

		GED	SVP			GED	SVP
8733-138T	AIR-CONDITIONING-MECHANIC HELPER, COMMERCIAL (mech. equip., n.e.c.)	3	3	8533-234T	REFRIGERATION-MECHANIC HELPER (mech. equip., n.e.c.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	3	4	M-H 23457	I-B 6	4-3	7-6	910	0Y1	
			4	<u>2</u>						4	5							
B	4	4	5	<u>4</u>	3	5	<u>4</u>	<u>4</u>	<u>3</u>	4	5	M-H 234	I-B 67	3-2	3	139	23Y	
					4												23	

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand the operation of industrial and commercial refrigeration and air-conditioning systems and reasoning and judgment to install and repair their structural and functional components;
- spatial perception to interpret technical diagrams, specifications or established plans for installation of systems or units;
- form perception to examine components for defects or excessive wear and to detect poor electrical connections;
- eye-hand-finger co-ordination and manual dexterity to assemble

- structural framework by riveting, welding and brazing; and installing and repairing mechanical components using hand tools;
- finger dexterity to nimbly manipulate small objects and to adjust controls for optimum performance of refrigeration or air-conditioning systems;
- ability to communicate orally when directing sub-contractors or helpers;
- near visual acuity to read gauges, dials, instruments and measuring devices.

B

- learning ability to acquire the knowledge and skills needed to help refrigeration or air-conditioning mechanics;
- spatial perception to read instructions or diagrams and visualize positions and functions of mechanical or structural components;
- eye-hand co-ordination and manual dexterity to accurately cut and thread pipe, or to install clamps, brackets or other parts;
- finger dexterity to nimbly manipulate small parts such as bolts, screws, nuts and washers.

All workers in this chapter require:

- physical capacity to perform medium to heavy work and to reach for and handle a variety of parts, equipment and materials;
- ability to climb stairs and maintain balance on ladders, and to stoop, kneel and crouch to work in awkward positions;
- adaptability to a variety of climatic conditions when working outside and possible exposure to refrigerant, which may cause some discomfort.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to ten years of general education;
- a four to five-year apprenticeship program, usually provincially regulated;

B

- completion of certification requirements.
- eight to ten years of general education;
- up to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

With experience and additional training, workers in Cluster B may advance to higher skilled occupations in Cluster A. Experienced workers in Cluster A with supervisory potential may also advance to lead hand or foreman in the same work field.

Transfer

Because of specialization, direct transfer opportunities for workers in this chapter are limited, but possibilities may be to appropriate occupations requiring similar basic skills in repair or maintenance work on similar equipment.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A**Interests**

- non-social work, performed in relation to processes, machines and techniques;
- dealing with things and objects;
- work leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B**Interests**

- dealing with things and objects;
- routine, concrete and organized work;
- non-social work, performed in relation to processes, machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

FLOOR SURFACERS

WORK PERFORMED

This chapter includes occupations concerned with sanding and finishing wooden floors and installing and repairing carpeting, linoleum, tile and other types of floor covering. Worker functions include: measuring floor surfaces and computing amount of material required; working to close tolerances when laying out, cutting and fitting floor coverings; manipulating measuring and cutting tools; and operating sanding machines, edgers and polishers to prepare or finish floors. Work activities include: examining floors to ensure they are clean, smooth and level; cutting floor covering to minimize wastage; securing material into position using adhesive, tacks or tape; repairing damaged floor coverings; filling holes, cracks or other irregularities in wooden floor-surface with putty or mastic; and sanding and polishing floors.

LIST OF OCCUPATIONAL TITLES

A							
		GED	SVP			GED	SVP
8799-154	CARPET LAYER (construction)	3	6	8799-158	FLOOR LAYER (construction)	3	6
				8799-170	CARPET CUTTER (construction)	3	5
B							
		GED	SVP			GED	SVP
8799-202	FLOOR SANDER-AND-FINISHER (construction)	3	5	8799-262	FLOOR-COVERER HELPER (construction)	3	3
				8799-310	FLOOR-SANDER-AND-FINISHER HELPER (construction)	2	2

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	4	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	4	M-H 347	I	3	6-5	190	0Y
			<u>4</u>	<u>4</u>													
B	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M-H 34	I 57	3-2	5-2	139	20Y
	3									5						31	23Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

- A
- learning ability to understand the physical properties of carpets, tiles, linoleum and parquet flooring and to acquire the techniques and skills needed to lay out, cut, install or repair various floor coverings;
 - numerical ability to make accurate calculations when computing quantities of floor covering or other materials;
 - spatial perception to visualize the required cutting, fitting and placing of materials;
 - form perception to measure and cut covering to size and to detect imperfections;
 - eye-hand co-ordination and finger dexterity to make precise movements when laying tiles or parquet pieces or when joining carpet sections, using hand or machine stitcher;
 - manual dexterity to skilfully use shears, knives and tack hammers;

- near visual acuity to cut materials accurately, and colour vision to ensure proper match of colour and pattern.

- B
- learning ability to understand and apply the techniques of sanding and finishing wooden floors, or to acquire the skills needed to help in floor covering, sanding or finishing operations;
 - form perception to detect cracks, holes, indentations or other irregularities on floor surfaces;
 - eye-hand co-ordination to observe and feel sanded areas for smoothness, or to trim and cut carpets or tiles;
 - manual dexterity to move the hands easily and skilfully when maneuvring sanding or polishing machines;
 - adaptability to considerable noise from sanders or polishers, and exposure to fumes and odours from adhesives, and dusts while sanding floors.

All workers in this chapter also require:

- physical capacity to perform medium to heavy work, and to reach for and handle equipment and materials;
- capacity to kneel, crawl and crouch when cutting and fitting floor covering or when hand scraping floor edges and confined areas.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

- | | |
|--|--|
| <p style="text-align: center;">A</p> <ul style="list-style-type: none"> — eight to ten years of general education; | <ul style="list-style-type: none"> — six months to two years of on-the-job training and related experience, usually as Helper. <p style="text-align: center;">B</p> <ul style="list-style-type: none"> — eight years of general education; — from one to six months of on-the-job training and experience. |
|--|--|

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and additional training, workers in Cluster B may advance to occupations in Cluster A. Experienced workers in Cluster A with supervisory potential may advance to appropriate foreman occupations in the same work field.

Transfer

Because of specialization, transfer possibilities for workers in this chapter are mainly limited to other occupations requiring similar skills within the chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques;
- work leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

B

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations performed according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

OTHER CONSTRUCTION TRADES OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with a variety of construction trade activities such as maintaining buildings, highways, pipelines and irrigation canals; servicing mobile homes, swimming pools, water conditioners and sewers; waterproofing and caulking structures; mixing concrete and asphalt; erecting signs and fences; and installing awnings, draperies and window shades.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
8799-126	MAINTENANCE MAN, FACTORY OR MILL (any ind.)	<u>3</u>	3	3	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	H 2347	B 56	4	7	910	0Y1
8799-134	STEEPLEJACK (construction)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	3	<u>3</u>	<u>2</u>	4	M 2347	O 67	4	7	190	80Y1
8799-138	DISPATCHER, UTILITIES-MAINTENANCE CREWS (elec. power; utilities, n.e.c.)	<u>3</u>	3	3	3	4	<u>3</u>	4	4	4	5	5	S 456	I	4	7	6	459
8799-142	STRUCTURAL-HYDRAULIC-JACK OPERATOR (construction)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	5	<u>4</u>	4	4	4	5	L 2457	O 6	4	6	91	0Y4
8799-146	AUTOMATIC-DOOR SERVICEMAN (construction)	<u>3</u>	3	3	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	H 347	B	3	6	910	0Y
8799-150	MOBILE-HOME-EQUIPMENT SERVICEMAN (construction)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	M 347	B	3	6	19	0Y1
8799-162	CANAL-EQUIPMENT MECHANIC (construction)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	3	<u>3</u>	4	4	H 34	O 6	3	6	910	0Y6
8799-166	RIGGER, ACROBATIC EQUIPMENT (construction)	3	3	4	<u>3</u>	<u>4</u>	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	H 2347	I 6	3	6	193	Y2
8799-174	PIPE-CLEANING-AND-COVERING-MACHINE OPERATOR (construction)	3	4	5	<u>3</u>	<u>3</u>	5	<u>3</u>	4	<u>3</u>	4	5	L 34	O 57	3	5	91	Y0
8799-178	CONCRETE-MIXER OPERATOR (cement, stone & clay; construction)	3	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	M 4	I 57	3	5	91	Y0
8799-182	WELL-POINT PUMPMAN (construction)	3	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	3	5	M 346	O 45	3	5	91	Y0
8799-186	ASPHALT-PLANT OPERATOR (construction)	3	4	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	L 4567	B 3567	3	5	91	Y0
8799-190	PIPELINE-MAINTENANCE MAN (trans., n.e.c.)	4	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	H 234	B	3	5	913	0Y2
8799-194	MAINTENANCE MAN, BUILDING (construction)	3	4	4	<u>4</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	4	4	M 234	B 56	3	5	913	0Y1
8799-198	STRUCTURAL HYDRAULIC-JACK ERECTOR (construction)	3	4	5	3	<u>4</u>	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 23457	O 6	3	5	913	Y02
8799-206	SIDER (construction)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 234	O 6	3	5	913	0Y2
8799-210	DUCT INSTALLER (construction)	3	3	<u>4</u>	<u>3</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	<u>4</u>	5	H 234	I 6	3	5	91	0Y
8799-214	FENCE ERECTOR (construction)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	4	5	M 34	O	3	5	91	0Y
8799-218	MAINTENANCE-MAN HELPER, FACTORY OR MILL (any ind.)	4	5	4	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	4	5	H 2346	I 56	3	5	913	2Y
8799-222	BILLBOARD ERECTOR (construction)	3	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	<u>4</u>	5	H 234	B 6	3	4	19	2Y
8799-226	DRAPERY HANGER (ret. trade)	3	4	<u>3</u>	3	<u>3</u>	3	<u>3</u>	4	<u>4</u>	4	5	M 47	I	3	4	13	0Y2
8799-230	SEPTIC-TANK SERVICEMAN (construction)	3	4	4	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	3	4	H 34	O 47	3	4	913	0Y2
8799-234	AWNING INSTALLER (construction)	3	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	4	M 234	O 6	3	4	931	Y02
8799-238	SEWER-PIPE CLEANER (construction)	4	4	4	<u>4</u>	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	4	H 347	B 57	3	4	913	0Y2
8799-242	WATER-CONDITIONER SERVICEMAN (construction)	3	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	4	H 347	I	3	4	91	Y2
8799-246	DUCT LAYER (construction)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	4	5	H 234	O	3	4	91	0Y
8799-250	SWIMMING-POOL SERVICEMAN (misc. serv.)	3	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	4	5	M 2347	B 4	3	4	913	2Y

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
8799-266	WRECKER-AND-SALVAGE MAN (construction)	4	4	5	3	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	H 2347	O 567	3	4	139	28
8799-254	BUILDING-EXTERIOR CLEANER (construction)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>2</u>	4	M 234	O 4567	3	3	913	28Y
8799-270	SEAT INSTALLER (construction)	4	4	4	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	4	5	M 34	I	2	4	319	2Y
8799-274	HIGHWAY-MAINTENANCE MAN (construction)	4	4	5	<u>3</u>	4	5	<u>4</u>	4	<u>3</u>	<u>3</u>	4	H 34	B 6	2	3	193	23Y
8799-278	CONSTRUCTION HELPER (construction)	4	4	4	4	4	5	<u>4</u>	4	<u>3</u>	3	5	V-H 234	B 567	2	3	139	23Y
8799-282	DRAIN-TILE LAYER (construction)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	M 2457	O	2	3	139	23Y
8799-286	DAMPPROOFER (construction)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	M 2347	B	2	3	13	23
8799-290	AWNING-INSTALLER HELPER (construction)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	H 234	O 6	2	3	31	23
8799-294	DOPEMAN (construction)	4	5	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	M 34	O 3467	2	3	319	23
8799-306	CAULKER (construction)	4	4	5	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	<u>4</u>	5	M 234	O 6	2	2	13	23
8799-314	KETTLEMAN (construction)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	5	5	H 34	O 367	2	2	31	23

AIR PILOTS, NAVIGATORS AND FLIGHT ENGINEERS

WORK PERFORMED

This chapter includes occupations concerned with piloting or navigating fixed-wing or rotary-wing aircraft. Worker functions include: piloting aircraft during take-off, in flight and when landing; examining and evaluating flight data; computing geographical positions, effects of weather on duration of flight, fuel remaining and other factors; co-ordinating en-route navigational information to obtain in-flight directions and course corrections; and communicating with ground and air-traffic control stations. Work activities include: preparing flight plans and ensuring aircraft is ready for flight; conducting checks of instruments and controls; maintaining flight logs and completing trip reports; and operating equipment provided for special purposes such as aerial photography, surveying and spraying or dusting.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9111-110	TEST PILOT (air & space-craft; air trans.)	5	8	9111-126	HELICOPTER PILOT (air trans.)	5	7
9111-114	AIRPLANE-PATROL PILOT (air trans.)	5	7	9111-130	PILOT-NAVIGATOR, PHOTOGRAMMETRY (air trans.)	5	7
9111-118	AIRPLANE PILOT (air trans.)	5	7	9111-134	SPRAY PILOT (misc. ser.)	5	7
9111-122	EXECUTIVE PILOT (air trans.)	5	7	9111-136	SECOND OFFICER (air trans.)	5	7

B

		GED	SVP
9111-138	NAVIGATOR (air trans.)	5	6

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	L 4567	I 56	5	8-7	91	9081
	<u>1</u>			<u>2</u>													
B	<u>2</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>4</u>	S 4567	I 5	5	6	91	Y018

APTITUDES AND CAPACITIES

Workers in this chapter require:

Air Pilots and Flight Engineers

- learning ability to understand and apply a knowledge of aeronautical, meteorological and navigational principles and to acquire the skills needed to fly an aircraft;
- verbal ability to understand and use technical vocabularies such as those found in aircraft pilots' manuals, charts and weather reports and to communicate effectively with other personnel;
- spatial perception to visualize speed and distance factors in relation to precise take-off and landing limits and procedures, and when airborne, to visualize relationship of own aircraft to other aircraft;
- form perception to note slight differences in gauge readings and indicator positions;
- eye-hand-finger co-ordination, finger and manual dexterity, and eye-hand-foot co-ordination to make a variety of co-ordinated movements quickly and accurately while flying the aircraft.

Navigators

- learning ability to understand and apply navigational, meteorological and aeronautical principles and procedures;
- verbal ability to understand and use technical terminology found in navigational manuals, meteorological charts and weather reports and to communicate effectively with other personnel;
- numerical ability to a high degree, to make quick and accurate calculations from a variety of navigational data received from electronic aids and celestial observations;
- spatial perception to visualize the relationship of the moving aircraft to geographical positions, speed and distance factors, and to plot courses;
- form perception to read graphic representations on charts and maps;
- clerical perception to accurately read words, symbols and numbers, and to avoid perceptual mistakes in mathematical compilations and navigational computations.

All workers in this chapter also require:

- physical capacity, agility and stamina, to climb into and out of confined flight deck spaces, remain seated for extended periods and maintain balance during periods of air turbulence;
- capacity to articulate clearly and quickly when communicating with air-traffic control personnel or other members of the flight crew;
- good hearing to receive communications and to detect slight changes in aircraft sounds;

- near-and far-visual acuity, depth perception and accommodation to fly aircraft and make observations;
- colour vision to recognize indicators and navigational aids;
- capacity to work in confined areas while exposed to continuous noise, depending upon type of aircraft;
- adaptability to hazardous conditions normally prevalent when piloting aircraft in low-flying operations such as utilities inspections, crop spraying or dusting, and water bombing.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

for Air Pilots

- no specified educational requirements, but preference may be for high school graduation at the university entrance level, and completion of a two to three-year course in aeronautics at a community college;
- completion within one year of commencement, a full or part-time commercial pilot's course at an approved flying club or school;
- completion of examination requirements in accordance with procedures and standards approved by the Ministry of Transport.

for Helicopter Pilots

- similar requirements to those of Air Pilots, except that flying experience and training will have been acquired on helicopter type aircraft.

for Navigators

- high school graduation, with emphasis on mathematics and science;
- a one to two-year company sponsored training course and on-the-job training which normally includes the number of flight hours specified as the navigation experience requirement;
- completion of examination requirements in accordance with procedures and standards approved by the Ministry of Transport.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement possibilities for workers in this chapter vary with the type of licence held, for example, Commercial Pilot Licence, Senior Commercial Pilot Licence and Airline Pilot Licence. These licences may be endorsed for additional qualifications or ratings as the holder becomes more qualified; for example, Instrument Rating, Instructor Rating, and Multi-Engine Endorsement. Most occupations in this chapter are of a career-type and as workers increase their seniority and experience they obtain a better selection of routes, schedules and more sophisticated types of aircraft, with increased remuneration. Those with supervisory potential and administrative ability may advance to 9110-114 SUPERVISOR, AIR PILOTS AND NAVIGATORS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some Pilots who acquire knowledge of business practices may become self-employed as operators of flying schools, air taxis or other aerial services. Others may transfer to administrative positions in aircraft manufacturing and government aviation agencies.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to machines and techniques;
- dealing with things and objects of a mechanical nature.

Temperaments

A

- the evaluation of information against sensory or judgmental criteria to arrive at decisions;
- the evaluation of information against measurable or verifiable criteria to make decisions;
- performing adequately under stress when confronted with the critical or unexpected;
- a variety of duties often characterized by frequent change.

B

- the precise attainment of set limits, tolerances or standards as reflected in aircraft navigation;
- the evaluation of information against measurable or verifiable criteria;
- a variety of duties often characterized by frequent change;
- performing adequately under stress when confronted with the critical or unexpected.

AIR TRANSPORT OPERATING SUPPORT OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with providing direct ground support to air transport operations. Worker functions include: co-ordinating and controlling the movement of aircraft to provide maximum safety and to minimize delays; analyzing and compiling weather reports and other flight information; communicating by voice with aircraft crews, ground crews or other supporting units; and driving aircraft-servicing vehicles. Work activities include: evaluating meteorological, navigational and other information to determine optimum route, altitude and other factors; briefing flight crews and authorizing flights; preparing or reviewing flight plans, flight logs or other reports; controlling air traffic by radio during landing, take-off and en-route, and operating or monitoring radio and navigation aids to provide pilots with essential information; controlling movement of ground traffic on runways and taxiways; alerting emergency personnel; preparing schedules for aircraft or flight crews; transmitting, receiving and logging radio messages; loading or unloading freight and luggage; replenishing aircraft fuel, water and other supplies and cleaning or providing other facilities to service aircraft.

LIST OF OCCUPATIONAL TITLES

A							
		GED	SVP			GED	SVP
9113-110	AIR-TRAFFIC CO-ORDINATOR (air trans.)	4	8	9113-114	FLIGHT DISPATCHER (air trans.)	4	8
				9113-118	AIR-TRAFFIC CONTROLLER (air trans.)	4	7
B							
		GED	SVP			GED	SVP
9113-122	AIRLINE-RADIO OPERATOR (air trans.)	4	6	9113-130	FLIGHT-DISPATCH CLERK (air trans.)	4	4
9113-126	SCHEDULE ANALYST (air trans.)	4	6	9113-134	CREW SCHEDULER (air trans.)	3	3
C							
		GED	SVP				
9113-138	STATION ATTENDANT, RAMP (air trans.)	3	3				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>2</u>	<u>2</u>	<u>3</u>	<u>2</u>	3	<u>3</u>	4	4	4	5	4	S-L 4567	I	4	8-7	92	45918
B	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	S 56	I	4-3	6-3	32	0Y5
C	3	4	4	<u>3</u>	4	4	<u>4</u>	4	<u>3</u>	<u>3</u>	5	M 2347	O 57	3	3	913	23Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply air traffic control procedures and regulations, and to understand the operational characteristics of various aircraft, and reasoning ability to make quick, accurate and independent judgments and decisions;
- verbal ability to quickly and accurately comprehend graphic, written or oral instructions and to speak in a concise, well-organized manner when communicating operational or technical information by radio, or when preparing written reports;
- numerical ability to calculate course, speed, distance, fuel and endurance problems, changes in arrival and departure times, and allowable take-off and landing weights, quickly and accurately;
- spatial perception to visualize and maintain a mental picture of a constantly changing air-traffic control situation;
- clerical perception to keep accurate records and to detect errors in schedules or tabulations;
- eye-hand-finger co-ordination to make precise movements when operating electronic equipment;
- physical capacity to perform light work while remaining seated or standing during extended periods of mental concentration and stress;
- capacity to extend the arms and reach for and handle communications equipment such as telephones and electronic equipment controls;
- capacity to speak clearly and concisely when communicating with aircraft or other air traffic control stations;
- good hearing to receive aircraft communications accurately;
- good visual acuity, both near and far, good depth perception, accommodation and colour vision.

B

- learning ability and reasoning ability to prepare aircraft schedules and personnel shift-work rosters and to apply established procedures to work situations;

- verbal ability to orally communicate technical or operational information and to prepare written reports and schedules;
- numerical ability to calculate flight data such as time of arrival and departure, fuel requirements and allowable take-off and landing weights;
- clerical perception to keep accurate records and to avoid perceptual errors in tabulations or schedules;
- physical capacity to perform light work such as reaching for maps, reports and files, fingering typewriter keyboards or operating controls of electronic equipment and preparing schedules and reports;
- capacity to speak clearly and hear easily when communicating with flight crews and other personnel.

C

- learning ability to understand and follow written or oral instructions;
- spatial perception for judging speeds and relative distances while driving ramp service vehicles and positioning aircraft;
- eye-hand co-ordination and manual dexterity when driving service vehicles, loading and unloading luggage and freight, and refuelling aircraft;
- eye-hand-foot co-ordination to move hands and feet simultaneously and rapidly in response to visual stimuli when operating levers, pedals, steering wheel and other vehicle controls;
- physical capacity to perform medium work, reaching for and lifting luggage or freight items weighing up to fifty pounds, and agility to climb and balance on aircraft wings and work in awkward positions such as stooping or crouching when servicing aircraft;
- good visual acuity and colour vision to drive service vehicles and recognize various coloured light signals;
- adaptability to working outside while exposed to a wide variety of temperatures, weather conditions and the loud noise of jet and other types of engines;
- adaptability to obnoxious odours and possible injurious vapours during aircraft-servicing operations.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- secondary school graduation or its equivalent;
- a two-year training program at a Ministry of Transport teaching establishment, and one or more years of on-the-job training and related experience;
- completion of Ministry of Transport licensing requirements.
- for 9113-114 FLIGHT DISPATCHER, four or more years of experience in airline operating occupations.

B and C

- ten to eleven years of general education;
- for 9113-122 AIRLINE-RADIO OPERATOR, a six-month company sponsored course in equipment operation and regulations and procedures, and six months to one year of on-the-job training;
- completion of Ministry of Transport licensing requirements.
- for other occupations, three months to two years of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for workers in this chapter is normally limited to positions of increased responsibility in the same work field; for example, air traffic control occupations advance from Ground Controller to Airport Controller, Terminal Controller and Area Controller. Experienced workers with supervisory ability may advance to 9110-110 FOREMAN, AIR TRANSPORT OPERATING SUPPORT OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Many occupations in this chapter are career-type positions, and transfer possibilities are normally between various airline companies and government agencies. Some workers in lesser skilled occupations may transfer with some additional training, to other occupations requiring similar skills, in operations support or sales department of airlines.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- work that is basically non-social in nature and is carried on in relation to procedures and techniques such as operating communications equipment;
- business contact with people such as passing information to aircraft pilots.

Temperaments

- the direction, control and planning of an entire activity such as the orderly movement of aircraft in and out of airports;
- dealing with people in actual job duties, beyond giving and receiving simple instructions, such as advising aircraft pilots on meteorological and navigational matters or directing personnel during emergency situations;
- the evaluation of information using sensory or judgmental criteria to make decisions;
- a variety of duties often characterized by frequent change as evidenced by reviewing flight plans, talking with pilots, operating electronic equipment, directing movement of ground vehicles and personnel and responding quickly to emergencies;
- for 9113-118, AIR-TRAFFIC CONTROLLER, performing adequately under stress during periods of congested air traffic, adverse weather conditions and emergencies.

B

Interests

- routine, concrete and organized activities although work may be relatively complex;
- business contact with people.

Temperaments

- the evaluation of information using measurable or verifiable criteria to make judgments and decisions;
- the precise attainment of set limits or standards;
- dealing with people in actual job duties, beyond giving and receiving simple instructions, such as preparing personnel work schedules and transmitting messages by radio.

C

Interests

- work that is basically non-social in nature, and is carried on in relation to processes, machines and techniques, such as refuelling aircraft and other aircraft-servicing activities;
- dealing with things and objects such as luggage, fuelling equipment and servicing vehicles;
- routine, concrete and organized work.

Temperaments

- repetitive or short-cycle operations carried out according to set procedures or sequences;
- doing things under specific instructions, allowing little or no room for independent action in working out job problems;
- the precise attainment of set limits or standards.

AIR TRANSPORT OPERATING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with a variety of activities in air transport operations, such as stocking aircraft with supplies for in-flight use by passengers, compiling load control data, and loading aircraft for dusting or spraying.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
9119-110	LOAD-CONTROL AGENT (air trans.)	3	3	<u>3</u>	<u>3</u>	4	<u>3</u>	3	4	4	5	5	S 456	I	4	5	1	0Y
9119-114	AIRPORT SERVICEMAN (air trans.)	3	3	4	<u>4</u>	4	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	M 34	B 56	3	6	91	0Y1
9119-118	COMMISSARY AGENT (air trans.)	3	4	<u>3</u>	5	4	<u>3</u>	4	4	4	5	5	M 456	I	3	3	13	0Y
9119-122	AERIAL-SPRAYING LINEMAN (air trans.)	4	4	4	5	4	<u>4</u>	<u>3</u>	4	<u>3</u>	4	5	VH 23456	B 6	2	3	13	2Y
9119-126	COMMISSARY ATTENDANT (air trans.)	4	4	4	5	4	4	<u>4</u>	4	4	4	5	L 34	I	2	2	31	23

LOCOMOTIVE ENGINEERS AND FIREMEN

WORK PERFORMED

This chapter includes occupations concerned with operating railway locomotives to transport freight and passengers, and to move locomotives within yards and servicing and repair areas. Worker functions include: compiling and interpreting data from train orders, radio-telephone communications, signals, railway regulations and maintenance reports to conduct train activities safely and efficiently; operating throttle, air brakes and other controls to start, stop and regulate the speed of locomotives; observing train movements and railway track to ensure safe operations; and speaking to or signalling members of train crews or traffic-control personnel to give or receive information concerning stops, delays and traffic. Work activities include: inspecting locomotives before and after runs to detect wear, damage or defects; testing electrical or mechanical units; and ensuring that fuel, water and sand supplies are adequate.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9131-110	LOCOMOTIVE ENGINEER (rail trans.)	4	7	9131-118	LOCOMOTIVE FIREMAN (rail trans.)	3	6
9131-114	YARD ENGINEER (rail trans.)	3	6	9131-122	HOSTLER (rail trans.)	3	4

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>4</u>	4	<u>3</u>	<u>4</u>	4		L 2467	I 5	4-3	7-4	913	Y0 Y02
	3	3		<u>2</u>				4									

APTITUDES AND CAPACITIES

- Locomotive Engineers and Firemen require:
- learning ability to understand and apply railway procedures, rules and regulations and to operate locomotives safely and efficiently;

— spatial perception to visualize the relationship of moving train to other objects, to judge distances and to visualize the proper functioning of all train and track systems;

— form perception to visually inspect equipment for wear or defects;

— eye-hand co-ordination and manual dexterity to move controls rapidly and accurately in response to visual signals;

— eye-hand-foot co-ordination to maintain balance on moving train;

— physical capacity and agility to climb and descend ladders and walk over and around obstacles;

— good hearing to discriminate between genuine signals and extraneous noise;

— near visual acuity to note slight changes in temperatures, pressures and other factors indicated by gauges and indicators;

— good colour vision to recognize coloured signals or indicator lights;

— far visual acuity and depth perception;

— adaptability to work while exposed to continuous monotonous sounds and intermittent noises of diesel engine, braking systems and loud train signals.

TRAINING AND ENTRY REQUIREMENTS

- Workers in this chapter normally require:
- nine to eleven years of general education;

— six months to three years of on-the-job training, depending on the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and additional training and self-study courses, Locomotive Firemen may advance to Locomotive Engineers. Newly appointed Locomotive Engineers normally start by being placed on the "spare list" and it may take several years before he receives regular assignments. Advancement is normally to better hours of work, better runs and increased remuneration. A few with supervisory potential may advance to occupations in Volume I, Unit Group 9130, FOREMEN, RAILWAY TRANSPORT OPERATING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Transfer possibilities are limited and locomotive engineers usually remain in their occupation for their entire careers.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried on in relation to machines and techniques;
- dealing with things and objects of a mechanical nature;
- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards such as maintaining operating schedules;
- the evaluation of information against measurable or verifiable criteria such as time, speed, distance, traffic and condition of train equipment.

CONDUCTORS AND BRAKEMEN, RAILWAY

WORK PERFORMED

This chapter includes occupations concerned with the enroute operation of passenger and freight trains; maintaining efficiency of railway cars and equipment during runs; and making and breaking up trains in railway or industrial yards. Worker function include: co-ordinating data from train orders, schedules and other instructions to direct train movements; supervising activities of train crew; signalling and talking to crew members or passengers to receive or dispense information; and manipulating levers, valves and other devices to control heating, ventilating and air-conditioning systems, couple or uncouple cars, open and close track switches, and operate brake hand-wheels. Work activities include: inspecting railway cars and equipment for serviceability and cleanliness; assisting passengers boarding or leaving trains; checking storage of passengers' baggage in luggage racks to avoid accidents; collecting fares and tickets; patrolling train during run to detect irregularities and observing exterior of train for overheated wheel bearings, dragging equipment or insecure loads; directing or setting out warning signals during unscheduled stops to warn approaching trains; making minor emergency repairs; and preparing reports and keeping records.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9133-110	CONDUCTOR, PASSENGER TRAIN (rail trans.)	4	7	9133-114	CONDUCTOR, ROAD FREIGHT (rail trans.)	4	7
				9133-118	CONDUCTOR, YARD (rail trans.)	4	6

B

		GED	SVP			GED	SVP
9133-122	BRAKEMAN, PASSENGER TRAIN (rail trans.)	3	4	9133-126	BRAKEMAN, ROAD FREIGHT (rail trans.)	3	4
				9133-130	BRAKEMAN, YARD (rail trans.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	<u>3</u>	4	4	4	<u>3</u>	4	4	4	<u>4</u>	4	L 4567	B 56	4	7-6	21 1	4051 405	
B	3	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	<u>3</u>	4	M 234567	B 56	3-2	4-3	321 31	20 23	
	4								4	4								

APTITUDES AND CAPACITIES

Train Conductors require:

- learning ability to understand train orders and operating procedures and regulations, and to reason and make judgments concerning action required to safely and efficiently maintain operating schedules;
- verbal ability to understand time-tables, switching orders and other written or oral instructions and to communicate effectively with train crew or passengers;
- numerical ability for 9133-110 CONDUCTOR, PASSENGER TRAIN, to rapidly calculate change from customers' payments;
- clerical perception to extract pertinent information from train schedules and orders and to avoid computational errors;

- eye-hand-foot co-ordination to maintain balance on erratically moving cars;
- physical capacity to walk, remain standing and maintain balance for extended periods of time, climb steps, and lift and carry weights up to twenty pounds;
- capacity to extend arms when reaching for or placing hand baggage in overhead racks and when making arm signals;
- capacity to communicate clearly with passengers and crew;
- near and far visual acuity and colour vision;
- adaptability to working both inside and outside while exposed to continuous noise and vibration from moving trains;

- adaptability to conditions where there is a variety of physical hazards such as falls, collisions and derailments.

Brakemen require:

- learning ability to understand train orders, company rules and regulations and reasoning ability to recognize indications of defects or abnormal conditions;
- form perception to examine equipment for signs of wear or defects;
- eye-hand co-ordination and manual dexterity to move hands easily and quickly when operating switches and brake wheels, connecting or disconnecting air hoses, coupling or uncoupling cars, and making minor emergency repairs to journal boxes or switches;
- eye-hand-foot co-ordination to climb ladders of moving trains, maintain balance on erratically moving trains, maintain balance on erratically moving decks, make arm signals to other workers and to operate brake wheels in response to signals;

- physical capacity and agility to climb ladders, walk and maintain balance on moving cars and to lift and carry weights up to fifty pounds;
- agility to work in awkward positions such as stooping, crouching or kneeling when inspecting or making minor repairs to couplings, air hoses and journal boxes;
- capacity to speak clearly when communicating with passengers and other workers;
- good vision, depth perception and colour vision;
- adaptability to both inside and outside working conditions while exposed to almost continuous noise and vibration from a moving train;
- adaptability to a variety of physical hazards such as possibility of falls, collision or derailment and close proximity to moving trains.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- nine to eleven years of general education;
- two to four years of previous experience as a brakeman;

B

- up to one year of on-the-job training.
- eight to nine years of general education;
- up to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement for experienced workers is normally to occupations requiring higher responsibilities within the chapter, for example, with experience and additional training, brakemen may advance to conductors. Advancement is usually from freight yards to freight trains and then passenger trains. A few experienced conductors with supervisory potential may advance to appropriate occupations in Volume I, Unit Group 9130, FOREMEN, RAILWAY TRANSPORT OPERATING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities are limited and conductors usually remain in their occupations for their entire careers.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

A

- dealing with things and objects.

Additional, for 9133-110, CONDUCTOR, PASSENGER TRAIN:

- business contact with people.

B

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

A

- the direction, control, planning of an entire activity or activities of others as in co-ordinating entire train activities and work of crews;
- the evaluation of information against measurable or verifiable criteria;
- dealing with people in actual job duties, beyond giving or receiving instructions, such as assisting elderly or infirm passengers and controlling unruly persons.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the evaluation of information against measurable or verifiable criteria.

RAILWAY TRANSPORT OPERATING SUPPORT OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with providing direct support to railway transport operations. Worker functions include: co-ordinating information from train orders, schedules, movement charts or location panel-board and directing railway traffic on specified section of railway; operating equipment that controls railway switches and signals; compiling, copying or comparing data concerning the identification, location, requirement, assignment, movement, routing or destination of rolling stock; talking with or signalling operating crews and other personnel; tending turntables and switching equipment; and handling fuel and water replenishment and materials. Work activities include: reading train orders and schedules to become familiar with scheduled runs, destinations, priorities and times of arrival and departure; preparing duty-roster schedule and notifying personnel of their assignments; monitoring panelboard to determine location of trains or charting movement of trains on graph or chart; attaching identification labels to railway cars; and performing minor maintenance and cleaning duties.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9135-110	CENTRALIZED-TRAFFIC CONTROLLER (rail trans.)	4	7	9135-114	CAR-ASSIGNMENTS CLERK (rail trans.)	4	6

B

		GED	SVP			GED	SVP
9135-118	CAR DISTRIBUTOR (rail trans.)	3	5	9135-134	CREW SCHEDULER (rail trans.)	3	3
9135-122	ENGINE DISPATCHER (rail trans.)	3	5	9135-138	YARD CLERK (rail trans.)	3	3
9135-128	CAR CHECKER (rail trans.)	3	4	9135-142	TRAIN-DISPATCHER CLERK (rail trans.)	2	3

C

		GED	SVP			GED	SVP
9135-126	CAR RETARDER OPERATOR (rail trans.)	3	5	9135-130	TOWERMAN (rail trans.)	3	4

D

		GED	SVP			GED	SVP
9135-146	TURNTABLE TENDER (rail trans.)	2	2	9135-150	LOCOMOTIVE ATTENDANT (rail trans.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	3	<u>2</u> 4	<u>4</u>	<u>3</u>	4	4	4	5	4	S 4567	I	4	7-6	12	495
B	<u>4</u> <u>3</u>	<u>4</u> <u>3</u>	4	4	4	<u>3</u> <u>4</u>	<u>4</u> "	<u>4</u>	4	5	5	S-L 456	I	3-2	5-3	31	2Y 23Y
C	<u>3</u>	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	4	<u>4</u>	5	4	S-L 4567	I	3	5-4	193	23Y
D	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5	M 47	B 5	2	2	319	23Y

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand procedures and regulations to operate a centralized-traffic-control system and reasoning ability to make quick and accurate judgments when switching trains to sidings or routing fast trains around slower ones;
- verbal ability to read and understand technical manuals and interpret panel displays, traffic and company regulations and orally communicate technical or operational information;
- spatial perception to monitor centralized-traffic-control boards and to visualize the relative positions and movements of trains on specified sections of railway;
- form perception to distinguish and select correct positions of keys, switches and buttons on control board;
- clerical perception to keep accurate records and detect errors in schedules;
- physical capacity to reach for and move keys, buttons and other control devices that activate train switches and signals to reroute, stop or control speed of trains;
- capacity to hear and talk clearly when communicating with train crews and station agents by radio;
- good eyesight and colour vision.

B

- learning ability to become thoroughly familiar with established rules and regulations and to apply them to specific work activities;
- verbal ability to communicate effectively when giving or receiving instructions and information and reading comprehension to obtain pertinent information;
- clerical perception to avoid errors in reading tabular information and in keeping accurate records;
- eye-hand co-ordination and finger dexterity to manipulate small objects such as remote-control switches, telegraph keys, typewriter or teletypewriter keyboards;
- capacity to perform light work, including reaching for, handling or fingering telephone, telegraph key or keyboard machines, attaching

labels to cars, examining door seals or checking switching orders and other clerical records;

- capacity to hear and to speak clearly when talking to other employees or customers.

C

- learning ability to understand and follow written or oral instructions;
- spatial perception to understand the functional nature of equipment and to visualize the movement and relative speed of vehicles in relation to one another;
- clerical perception to avoid errors in tabular material and to keep accurate records;
- eye-hand co-ordination to operate car-classification or switching equipment;
- manual dexterity to move the hands easily and skilfully when setting train switches and signals or operating panelboard-console control switches and communications equipment;
- physical capacity to perform light work, climb steps and reach for and handle communications equipment, operate panelboard or set switches and signals;
- capacity to hear and speak clearly when exchanging or dispensing information with yard crews and other personnel;
- good eyesight, depth perception and colour vision.

D

- learning ability to understand and follow simple instructions;
- eye-hand co-ordination and manual dexterity to move levers and other controls;
- eye-hand-foot co-ordination and manual dexterity to move levers and pedals quickly and accurately;
- physical capacity to lift and carry weights weighing up to fifty pounds;
- agility to reach for and move levers and handle such items as shovel, broom, lubricating equipment or sand;
- good eyesight, depth perception and colour vision;
- adaptability to either inside or outside conditions while exposed to loud noises of diesel engines or repair operations.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- six to nine months of on-the-job training and four to five years of previous experience in other occupations that provide direct support to railway operations.

B

- eight to ten years of general education;

- nine months on-the-job training and one year of previous experience in related work.

C

- seven to ten years of general education;
- one to two months of on-the-job training and up to one year of previous experience in railway-yard labouring or other elemental work.

D

- seven to ten years of general education;
- four to six weeks of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in this chapter at the elemental level normally advance to more demanding occupations within the chapter as they acquire experience, knowledge and seniority. Newly qualified workers are normally placed on the “spare list” and given temporary assignments until they acquire sufficient seniority for regular assignments. Those with supervisory potential may advance to appropriate occupations in Volume I, Unit Group 9130, FOREMEN, RAILWAY TRANSPORT OPERATING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities are limited, but some workers may transfer to appropriate occupations requiring similar skills in Volume I, Unit Groups 9139, RAILWAY TRANSPORT OPERATING OCCUPATIONS, N.E.C., and 9199, OTHER TRANSPORT AND RELATED EQUIPMENT OPERATING OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

A

- dealing with things and objects;
- business contact with people.

B

- routine, concrete and organized work;
- dealing with things and objects.

C and D

- dealing with things and objects;
- non-social work, carried on in relation to machines and techniques;
- routine, concrete and organized work.

Temperaments

A

- the direction, control and planning of an entire activity or the activities of others;
- the evaluation of information against sensory or judgmental criteria;
- dealing with people in actual job duties beyond giving and receiving instructions.

B, C and D

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits tolerances or standards.

Additionally, for Clusters C and D:

- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

RAILWAY TRANSPORT OPERATING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with a variety of activities in railway transport operations, such as locating and inspecting freight cars, recording train arrival and departure times, and icing refrigerator cars.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
9139-110	FREIGHT-CAR-SERVICE INSPECTOR (rail trans.)	<u>3</u>	3	3	4	<u>3</u>	<u>3</u>	4	4	4	4	5	L 56	B	3	5	13	02
9139-114	TRAIN CLERK (rail trans.)	3	4	<u>4</u>	5	4	<u>4</u>	4	4	4	5	5	S 4	I	3	3	31	23Y
9139-118	SIDING CHECKER-MESSENGER (rail trans.)	4	4	4	4	<u>4</u>	<u>4</u>	4	4	<u>4</u>	<u>3</u>	5	L 4567	B	2	3	31	23
9139-122	CAR ICER (rail trans.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	5	H 4	B 246	2	2	31	23

DECK OFFICERS

WORK PERFORMED

This chapter includes occupations concerned with managing and operating vessels on oceans or coastal and inland waters. Worker functions include: supervising and co-ordinating the activities of the crew to ensure efficient operation and maintenance of the ship; and directing, steering and navigating the vessel. Work activities include: determining geographical positions by observations of celestial bodies and terrestrial landmarks and by use of other navigational aids and communications equipment; directing the loading and discharging of cargo; safeguarding passengers, crew and cargo; and giving advice for the safe passage of vessels in hazardous waters where special skill and local knowledge is required.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9151-110	MASTER, SHIP (water trans.)	5	8	9151-122	FERRYBOAT MASTER (water trans.)	4	6
9151-114	MATE, SHIP (water trans.)	4	7	9151-126	TUGBOAT CAPTAIN (water trans.)	4	6
9151-118	PILOT, SHIP (water trans.)	4	7	9151-130	DECK-OFFICER CADET (water trans.)	4	5

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>2</u>	3	3	4	3	<u>3</u>	4	L 24567	B	5-4	8-5	59	490Y58	
<u>3</u>	<u>3</u>	<u>2</u>		<u>3</u>	4			4									

APTITUDES AND CAPACITIES

Deck Officers in the merchant marine require:

- learning ability to comprehend and apply the principles of celestial navigation, pilotage and basics of marine engineering, and to ensure stability in loading, unloading and transit of ships;
- verbal ability to communicate with people at all levels, give instructions and interpret technical charts, almanacs, manuals and other publications;
- numerical ability to quickly and accurately calculate geographical positions and course, speed and tide, and to ensure ship's stability;

- spatial perception to visualize the position and movement of ships in relation to one another and to circumvent navigational hazards;
- eye-hand-foot co-ordination to maintain balance on an erratically moving deck and to climb and descend ladders;
- physical capacity and agility to reach for and handle equipment such as sextant, compass and parallel ruler;
- good vision, depth perception and colour recognition for both close-up and distant work;
- adaptability to working inside or outside under a wide range of temperatures and weather conditions.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- twelve years of general education with emphasis on mathematics and physics preferred;

- pre-employment courses in a coastguard college or vocational centre, ranging from one to four years, depending on the occupation; or
- one to four years of approved sea-going experience;
- successful completion of examinations leading to certification.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, experience and the successful completion of Ministry of Transport examinations, advancement may be to occupations requiring higher skills and responsibilities, such as First Mate or Master. Advancement may also be to service on larger and more complex ships with increased remuneration.

Transfer

Transfer possibilities may be to land-based occupations concerned with shipping where special skills and knowledge acquired through service aboard ships is necessary, for example, 9159-112 MARINE SUPER-INTENDENT, or with marine insurance adjusting, sea-school instructing or positions with government agencies.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- work resulting in prestige or esteem of others;
- work which is basically non-social in nature and is carried on in relation to the operation of a large variety of machinery and equipment and use of techniques of modern navigational systems.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- the evaluation of information against sensory or judgmental criteria, such as deciding ship's sailing or arrival time, based on state of tide, river current or wind velocity;
- the evaluation of information against measurable or verifiable criteria, such as data obtained from celestial navigation readings and the relating of this information to other navigational data;
- the precise attainment of set limits or tolerances as applied to geographical positions, courses, speeds and times involved;
- dealing with people in actual job duties beyond giving and receiving instructions;
- performing adequately under stress when faced with critical or unexpected situations such as severe storms, fire, collision or possible sinking at sea;
- a variety of duties often characterized by frequent change.

ENGINEER OFFICERS, SHIP**WORK PERFORMED**

This chapter includes occupations concerned with planning and directing the activities of a ship's engine-room crew, and repairing, maintaining and operating the main propulsion engines, auxiliary machinery and electrical equipment. Worker functions include: co-ordinating and supervising activities of engine-room crew; controlling the operation of ship's propulsion engines and related equipment; analyzing data gathered by examination or tests to evaluate the condition of mechanical and electrical components; working to close tolerances to dismantle, repair and reassemble machinery and equipment. Work activities include: standing engine-room watches, observing gauges, dials and indicators; adjusting valves to control temperatures, pressure, flow of liquids and speed of pumps; and maintaining a record of engine-room operations.

LIST OF OCCUPATIONAL TITLES

			GED	SVP				GED	SVP
9153-110	MARINE ENGINEER, CHIEF (water trans.)		4	8	9153-114	MARINE-ENGINEER OFFICER (water trans.)		4	7
					9153-118	MARINE-ENGINEER-OFFICER CADET (water trans.)		4	5

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>2</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4		L-M 34567	I 3567	4	8-4	9150	40Y5
<u>3</u>																	

APTITUDES AND CAPACITIES

Engineer Officers, Ship require:

- learning ability to understand and apply the principles and techniques of marine engineering and electrical technology;
- verbal ability to communicate effectively and to interpret a wide range of technical instructions in manuals or other publications;
- numerical ability to calculate fuel quantities and consumption, and for test and repair work;
- spatial ability to visualize the complete operation of a marine power plant, the fitting together of parts and their functions in relation to one another;
- form perception to inspect engines and other equipment to determine malfunctions;
- eye-hand-finger co-ordination and manual dexterity to make adjustments to throttles, gears and levers when operating machinery, and

to dismantle, repair and reassemble machinery and equipment using hand and power tools, and lifting devices;

- eye-hand-foot co-ordination to maintain balance on erratically-moving decks;
- physical capacity to lift items weighing up to fifty pounds and agility to climb and descend ladders;
- agility to work in confined or restricted areas and in awkward positions such as crouching or kneeling during the repair or inspection of machinery;
- good hearing to detect engine malfunctions;
- good vision for close-up work, and depth perception when assembling mechanical parts or inspecting equipment;
- adaptability to working inside while exposed to a wide range of temperatures, continuous high noise levels of operating machinery such as generators and exhaust fans, and the possibility of injury from falls or the danger of fire or collision.

TRAINING AND ENTRY REQUIREMENTS

Engineer Officers normally require:

- twelve years of general education;
- a three to four-year program of studies at a marine school or college and on-the-job training; or,
- a three to four-year apprenticeship program as a machinist engaged

in constructing, installing or repairing of steam or internal combustion marine engines or similar type of equipment; or,

- three to four years of on-the-job training and experience while serving as engine-room crewman combined with part-time studies in related courses;
- completion of Ministry of Transport Examinations and certification.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement is normally from Fourth to Third, Second and First Engineer Officer, in accordance with ability, experience and examinations completed. Further advancement may also be to Marine Engineer, Chief, or to employment on larger ships with increased responsibilities and remuneration.

Transfer

Some workers may transfer to shore occupations such as 9159-112 MARINE SUPERINTENDANT, or to administrative positions in the water transportation industry or government agencies. Transfer may also be to appropriate occupations in Minor Group 953, STATIONARY ENGINE AND UTILITIES EQUIPMENT OPERATING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to machines and techniques;
- dealing with things and objects of a mechanical nature;
- work resulting in the prestige or esteem of others;
- work leading to satisfaction from tangible results.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- dealing with people in actual job duties beyond giving and receiving instructions.

OTHER REQUIREMENTS

- non-susceptibility to chronic seasickness.

SHIP’S CARPENTERS

WORK PERFORMED

This chapter includes the occupation of Ship’s Carpenter, and is concerned with fabricating and repairing ship’s woodwork and wooden gear and performing a variety of maintenance and other duties as a member of a ship’s crew. Worker functions include: analyzing data from drawings, ship’s plans and other information to determine the measurements and nature of the work required; working with precision to make or repair partitions, doors, cabinets, lockers, tables and other items from wood; and manipulating carpenter’s hand and power tools and operating shop equipment. Work activities include: controlling winches to weigh or veer anchor, or to warp ship alongside; sounding storage tanks, calculating soundings and controlling pumps to transfer liquids between tanks; attaching cargo nets, pallets, or slings to winch wire; and signalling other workers to move cargo.

LIST OF OCCUPATIONAL TITLES

		GED	SVP
9155-110	SHIP’S CARPENTER (water trans.)	4	7

QUALIFICATIONS PROFILE

Aptitude												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	4		M 2347	B 6	4	7	910	0Y918

APTITUDES AND CAPACITIES

- Ship’s Carpenters require:
- learning ability to understand and apply a wide variety of techniques to fabricate and repair ship’s woodwork and wooden gear and reasoning ability to solve practical problems where established procedures do not exist;

– numerical ability to apply shop mathematics to solve practical problems and to calculate quantity, size and shape of articles or structures;

– spatial perception to visualize from blueprints, drawings or specifications the nature and positions of structures to be built;

– form perception to detect damage, weaknesses or imperfections in structural parts or surfaces;

– eye-hand-finger co-ordination, finger dexterity and manual dexterity when working with hand or power tools;
- eye-hand-foot co-ordination and ability to maintain balance to climb and descend ladders and perform work activities while standing on erratically moving decks;

– physical capacity to perform medium work requiring lifting of weights up to fifty pounds;

– agility to work in confined or restricted areas and in awkward positions such as stooping or crouching while reaching for and handling tools, parts and assemblies;

– visual acuity for close-up work;

– adaptability to working inside and outside under a variety of temperature and weather conditions;

– adaptability to conditions where there are a variety of physical hazards such as close proximity to operating machinery, exposure to grease and dirt, possibility of injury from falls and the danger of fire or collision.

TRAINING AND ENTRY REQUIREMENTS

- Ship’s Carpenters normally require:
- ten years of general education;

– a two to four-year apprenticeship program, or a similar form of on-the-job training combined with regular periods of full-time studies in a trade or vocational school.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement	Transfer
Advancement possibilities for Ship’s Carpenters are limited, but may be through employment in larger ships with increased responsibilities and remuneration.	With limited additional training, Ship’s Carpenters may transfer to appropriate occupations in Chapter 8781, CARPENTERS AND RELATED OCCUPATIONS, or in Minor Group 835, WOOD MACHINING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of ship's carpenter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to machines and techniques, such as using power tools and shop equipment to fabricate and repair wooden, metal or plastic structures;
- dealing with things and objects such as tools and workpieces;
- work leading to satisfaction from tangible results.

Temperaments

- the evaluation of information against measurable or verifiable criteria when dealing with measurements, materials and other specifications;
- the precise attainment of set limits, tolerances or standards, especially during measuring, marking and cutting operations;
- the evaluation of information against sensory or judgmental criteria;
- a variety of duties often characterized by frequent change, such as performing maintenance duties in a wide variety of crafts under all types of weather conditions and emergencies;
- performing adequately under stress when faced with critical or unexpected situations such as severe storms, fire, collision or possible sinking.

OTHER REQUIREMENTS

- must not be susceptible to chronic seasickness.

DECK CREW, SHIP

WORK PERFORMED

This chapter includes occupations concerned with performing deck and bridge duties on board vessels that transport freight and passengers or tow ships, barges, or log booms. Worker functions include: steering the vessel and controlling the speed and direction of engines or signalling engine-room personnel to do so; supervising and co-ordinating the work activities of deck hands; comparing ship's course, depth soundings and visual sightings with deck officers' instructions; manipulating hand and power tools to maintain ship's equipment; and handling hawsers, wire cables and associated gear to secure vessel or log boom, and lay out towing lines. Work activities include: standing lookout or security watches; breaking out, rigging, overhauling and stowing cargo-handling gear; stowing and removing stores and cargo; lowering and hoisting lifeboats, and operating firefighting and other safety devices; and performing cleaning duties.

LIST OF OCCUPATIONAL TITLES

A							
		GED	SVP			GED	SVP
9155-114	BOATSWAIN (water trans.)	3	6	9155-118	ABLE SEAMAN (water trans.)	3	5
B							
		GED	SVP			GED	SVP
9155-122	DECK-HAND (water trans.)	2	4	9155-126	TUGBOAT DECK-HAND, LOG BOOM (water trans.)	2	4

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G V N S P Q K F M E C																	
A	3	3	4	3	4	4	3	3	3	3	4	L-M 247	B 5	3	6-5	9	450Y1
								4								91	5Y
B	4	4	4	4	4	4	3	4	3	3	4	H 2347	O 46	2	4	13	23Y
						5				2							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- A**
- learning ability to understand and apply maintenance and operating procedures and techniques on board ships;
 - spatial perception to visualize relative position of ship with other ships, buoys, lights and other navigational aids to keep bridge or deck officers informed of ship's progress;
 - form perception to detect weaknesses or damage in structural parts, rigging and preservative coatings;
 - eye-hand co-ordination to move hands quickly and accurately when operating equipment such as winches to lower and raise lifeboats;
 - finger and manual dexterity to move hands and fingers accurately and rapidly to manipulate parts or objects, such as in splicing rope or sewing canvas;
 - physical capacity and agility to climb and descend ladders, maintain balance and perform work activities while standing or walking an erratically moving deck, and to lift weights up to fifty pounds;
 - good vision for viewing close-up and distant objects, good depth perception and colour vision;

- capacity to work both inside and outside while exposed to a wide range of temperatures and weather conditions;
- adaptability to working while exposed to loud intermittent noises of pneumatic and other types of machines.

- B**
- learning ability to understand and follow written or oral instructions;
 - eye-hand co-ordination to move hands quickly and accurately when steering ships or operating deck equipment;
 - manual dexterity to move hands easily when using hand and power tools to chip rust from surfaces, wash decks, paint surfaces and stow cargo-handling and other gear;
 - eye-hand-foot co-ordination, particularly for 9155-126, TUGBOAT DECK-HAND, LOG BOOM, for walking and balancing on floating logs while using pike pole to free log jams;
 - physical capacity to climb and descend ladders, maintain balance on erratically moving decks and to lift and carry objects weighing up to one hundred pounds;
 - agility to work in confined or restricted areas usually in awkward

- positions such as kneeling, crouching or stooping while handling tools, spare parts, and repairing log booms;
- good vision, depth perception and colour vision;
- capacity to work inside or outside while exposed to a wide range of temperatures, weather conditions and salt water spray;

- adaptability to conditions where there is a variety of hazards including exposure to grease, dirt and irritants, the possibility of injury due to falls, the danger of fire, collision and loss of life through drowning.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- seven to eight years of general education;

- three years of on-the-job training and experience leading to certification.

B

- seven to eight years of general education;
- one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, experience and successful completion of Ministry of Transport examinations, advancement for workers in this chapter may be from Deck-Hand to Able Seaman and to Boatswain. Those with ability and supervisory potential may also, with further training and completion of examinations, advance to 9151-114 MATE, SHIP.

Transfer

Because of the specialized nature of these occupations, transfer possibilities are limited, but may be between different types of ships such as between freighters and passenger ships, sea and ocean-going or inland ships and ferry boats.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

A

Interests

- work that is basically non-social in nature and is carried on in relation to processes and techniques, such as planned maintenance routines;
- dealing with things and objects.

Temperaments

- the direction, control and planning of the entire work activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- a variety of duties often characterized by frequent change.

B

Interests

- dealing with things and objects, for example, handling hawsers, repairing log booms and using a variety of hand and power tools and equipment to clean and refinish surfaces;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- performing tasks under specific instructions, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

OTHER REQUIREMENTS

Workers in these clusters should not be susceptible to chronic sea-sickness.

ENGINE AND BOILER-ROOM CREW, SHIP

WORK PERFORMED

This chapter includes occupations concerned with lubricating ship’s engines and machinery, attending boilers, and assisting in the repair of engines and other equipment. Worker functions include: comparing operating temperatures, pressures and other instrument readings with specified standards; manipulating valves and levers to adjust variables such as the level, flow or pressure of lubricants, water, steam, fuel and air; and tending boilers. Work activities include: observing gauges and other indicators; oiling and greasing machinery parts such as gears, shafts and bearings of main engines and auxiliaries; filling lubricant dispensers; connecting fuel lines; changing and cleaning burner nozzles; lighting boiler fires; assisting in the repair of machinery and equipment; and cleaning engine-room and machinery.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9157-110	OILER, MARINE (water trans.)	3	4	9157-114	FIREMAN, MARINE (water trans.)	3	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
4	4	4	4	<u>4</u>	5	<u>3</u> <u>4</u>	4	<u>3</u> <u>4</u>	<u>3</u>	<u>5</u> 4		L-M 34	I 35	3	4-3	319	23Y

APTITUDES AND CAPACITIES

- Marine oilers and firemen require:

 - learning ability to understand and apply oral or written instructions;
 - form perception to discern that operating machinery is properly lubricated and to detect defects and malfunctions;
 - eye-hand-finger co-ordination and manual dexterity to adjust levers and valves, lubricate machinery and handle tools and parts during repair operations;
 - eye-hand-foot co-ordination to climb and descend ladders, maintain
- balance and remain standing for extended periods on an erratically moving deck;
 - strength to lift and carry weights up to fifty pounds;
 - agility to work in confined or restricted spaces and in awkward positions such as kneeling and crouching when lubricating machinery and equipment;
 - adaptability to uncomfortably high temperatures;
 - adaptability to working conditions involving exposure to harmful effects of loud, continuous noises from operating machinery such as diesel engines, steam turbines and exhaust fans.

TRAINING AND ENTRY REQUIREMENTS

- Workers in this chapter normally require:
- seven to nine years of general education;
 - three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement	Transfer
Workers in this chapter with ability, interest and initiative may, with additional training and completion of certification requirements, advance to appropriate occupations in Chapter 9153, ENGINEER OFFICERS, SHIP.	Transfer possibilities are limited, but some workers may transfer to appropriate occupations in Chapter 9533, STATIONARY ENGINE AND AUXILIARY EQUIPMENT OPERATING AND MAINTAINING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this cluster require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work such as keeping engine-room watches and performing tasks for planned maintenance schedules;
- dealing with things and objects;
- non-social work, carried on in relation to the operation and maintenance of machinery.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instructions, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits or tolerances.

OTHER REQUIREMENTS

- non-susceptibility to chronic motion-sickness

WATER TRANSPORT OPERATING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with a variety of water transport activities such as attending to ship's business and comfort of passengers, operating ship's communications equipment, maintaining lighthouse and warning equipment, controlling inland ship traffic, and operating motorboats and cable ferries.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
9159-110	PURSER (water trans.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>2</u>	4	4	4	5	5	S 56	I	4	7	214	59Y1
9159-112	MARINE SUPERINTENDENT (water trans.)	<u>3</u>	<u>3</u>	<u>3</u>	3	4	<u>3</u>	4	4	4	5	5	S 456	B	4	7	21	9Y145
9159-114	RADIO OFFICER (water trans.)	<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>2</u>	<u>3</u>	4	5	L 4567	I	4	6	91	Y01
9159-118	LOCKMASTER (water trans.)	<u>3</u>	<u>3</u>	3	<u>3</u>	3	<u>3</u>	4	4	4	4	4	L 567	B 6	4	6	12	4501Y
9159-122	LIGHTHOUSE KEEPER (gov. serv.)	<u>3</u>	3	4	<u>3</u>	<u>3</u>	3	<u>3</u>	4	<u>3</u>	4	4	L 24567	I	3	6	91	60Y
9159-126	MARINE-TRAFFIC CONTROLLER (water trans.)	<u>3</u>	<u>3</u>	3	3	3	<u>3</u>	4	4	4	5	4	S 4567	I	3	5	91	0Y
9159-130	BRIDGE OPERATOR (water trans.)	3	3	4	<u>3</u>	3	3	<u>4</u>	4	<u>4</u>	4	4	L 467	I	3	4	913	2Y
9159-134	MOTORBOAT OPERATOR (water trans.)	3	4	4	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	4	5	M 247	O 45	3	4	913	2Y
9159-138	CABLE-FERRY OPERATOR (water trans.)	4	4	4	<u>3</u>	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	L 456	B 5	2	4	913	2Y
9159-142	LOADING-BRIDGE OPERATOR (water trans.)	4	4	5	<u>3</u>	4	5	<u>4</u>	4	<u>3</u>	4	5	L 47	I 5	2	3	913	2Y
9159-146	CABLE-FERRY OPERATOR, MANUAL (water trans.)	4	4	4	<u>4</u>	4	4	<u>4</u>	4	<u>3</u>	4	5	M 3456	O	2	3	913	2Y
9159-150	LOCK TENDER (water trans.)	4	4	5	<u>4</u>	4	4	<u>4</u>	4	<u>4</u>	4	5	L 456	B 6	2	3	139	23Y
9159-154	FERRYBOAT-TERMINAL MAN (water trans.)	4	4	4	<u>4</u>	4	4	<u>4</u>	4	<u>4</u>	4	5	M 34	B	2	3	31	23Y
9159-158	CABLE-FERRY DECKHAND (water trans.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	4	5	M 34	O	1	2	31	23

BUS DRIVERS

WORK PERFORMED

This chapter includes occupations concerned with operating buses to transport passengers to local and distant points on established or other routes. Worker functions include: driving a bus on urban or intercity routes; and talking with passengers to dispense information regarding schedules, routes, transfer locations and points of interest. Work activities include: inspecting vehicle prior to run; collecting tickets and cash fares; issuing transfers; entering transactions and other data in record books; and regulating heating, lighting and ventilating systems.

LIST OF OCCUPATIONAL TITLES

GED SVP

9171-110 BUS DRIVER (motor trans.) 3 4

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>4</u>	4	<u>4</u>	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4		M 4567	I	3	4	923	2Y59
<u>3</u>																	

APTITUDES AND CAPACITIES

Bus Drivers require:

- learning ability to operate a bus, to understand and apply motor vehicle and safety regulations and reasoning ability to adjust speed and duration of stops to maintain schedules and to use good judgment in critical situations;
- spatial perception to visualize relationship between own and other moving vehicles and stationary objects and to judge speeds and distances accurately;
- eye-hand-finger co-ordination and manual dexterity to make rapid and accurate movements when manipulating bus controls;
- eye-hand-foot co-ordination to operate vehicle controls;
- physical strength to lift and carry weights up to fifty pounds when loading and unloading luggage and other items;
- capacity to speak clearly when talking to passengers;
- capacity to hear alarm and other signals such as those from fire engines and railway crossings against a background of traffic noise;
- capacity to drive and remain alert for extended periods while exposed to continuous noise from own vehicle and traffic;
- adaptability to hazardous road conditions caused by traffic and weather;
- near and far visual acuity, depth perception and colour vision.

TRAINING AND ENTRY REQUIREMENTS

Bus Drivers normally require:

- nine to ten years of general education, although some employers may require high school graduation;
- one to four weeks of specialized training;
- on-the-job training for periods up to nine months;
- completion of licencing requirements.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Bus Drivers who acquire administrative ability may advance to appropriate occupations in other chapters, for example, 1176-158 INSPECTOR, TRANSPORTATION SERVICES; 4199-154 BUS-TRANSPORTATION-SERVICE CO-ORDINATOR; 9179-110 DISPATCHER, BUS; 9179-122 SCHEDULE MAKER. Those with supervisory ability may advance to 9170-110 FOREMAN, BUS DRIVERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some Bus Drivers may transfer to other motor-transport-operating occupations in Chapters 9173, TAXI DRIVERS AND CHAUFFEURS; 9175, TRUCK DRIVERS; and 9179, MOTOR TRANSPORT OPERATING OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of bus driver require significant interests in, and dispositions for work involving the following:

Interests

- work that is carried on in relation to machines and techniques;
- business contact with people;
- activities of a routine, concrete and organized nature.

Temperaments

- the precise attainment of set limits, tolerances or standards as reflected in adherence to established schedules and the safe and efficient operation of a bus;
- the evaluation of information using sensory or judgmental criteria as reflected in the operation of a bus in heavy traffic;
- dealing with people in actual job duties beyond giving and receiving instructions, such as assisting elderly or infirm passengers and controlling rush-hour passengers;
- repetitive or short cycle operations carried out according to set procedures or sequences.

OTHER REQUIREMENTS

- a neat appearance and pleasant personality;
- emotional stability.

TAXI DRIVERS AND CHAUFFEURS

WORK PERFORMED

This chapter includes occupations concerned with operating taxis or privately owned automobiles to transport passengers. Worker functions include: driving automobiles; and talking to passengers or dispatchers to receive or give information. Work activities include: assisting passengers in and out of vehicles and handling luggage; collecting fares and making change; recording trips and transactions; picking up and delivering packages; cleaning vehicles; and making minor repairs and adjustments.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9173-110	TAXI DRIVER (motor trans.)	3	3	9173-114	CHAUFFEUR (motor trans.)	3	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps
G	V	N	S	P	Q	K	F	M	E	C							
<u>4</u>	4	4	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4		L 47	B 567	3	3	932	2Y5

APTITUDES AND CAPACITIES

Taxi Drivers and Chauffeurs require:

- learning ability to operate a motor vehicle, understand and follow motor vehicle and safety regulations, know the location of streets and important buildings and reasoning ability to select the best routes according to varying traffic conditions;
- spatial perception to visualize the relationship between own and other moving vehicles and stationary objects and to judge distances accurately;
- eye-hand co-ordination and manual dexterity to make precise

- movements rapidly and accurately when manipulating gear shift, levers, brakes and other controls;
- eye-hand-foot co-ordination to operate a motor vehicle;
- physical capacity to lift and carry luggage and other items weighing up to thirty pounds;
- near and far visual acuity and depth perception;
- colour vision to recognize traffic signs and lights;
- capacity to drive an automobile for extended periods while exposed to high levels of traffic noise;
- adaptability to a wide range of road, traffic and weather conditions.

TRAINING AND ENTRY REQUIREMENTS

Taxi Drivers and Chauffeurs normally require:

- eight to ten years of general education;

- one to two months of on-the-job training, depending on employer requirements;
- completion of licensing requirements.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement opportunities for Taxi Drivers and Chauffeurs are very limited. A small number of experienced workers may advance to 9179-126 DISPATCHER, TAXICAB. Some may become self-employed as owner-operators of one or several vehicles.

Transfer

Some Taxi Drivers and Chauffeurs may transfer to 9171-110 BUS DRIVER, or to some occupations in Chapter 9175, TRUCK DRIVERS, provided they have the necessary qualifications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- activities that are carried on in relation to machines and techniques as reflected in the operation of a motor vehicle;
- routine, concrete and organized work;
- business contact with people as evidenced by driving passengers or employers to their destinations.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits or standards, as reflected in the efficient driving of motor vehicles;
- dealing with people in actual job duties beyond giving and receiving instructions such as assisting elderly or infirm passengers and dealing effectively with difficult customers.

OTHER REQUIREMENTS

- a neat, well-groomed appearance and especially for chauffeurs, a desire to serve others;
- ability to deal tactfully and courteously with all types of people.

TRUCK DRIVERS

WORK PERFORMED

This chapter includes occupations concerned with operating gasoline or diesel-powered trucks, tractor-trailers and similar vehicles to transport goods and materials over urban, inter-city, inter-provincial or international routes. Primary worker function is: driving a truck and operating its equipment. Work activities include: inspecting vehicle before and after run, and en-route; manoeuvring vehicle onto weighing scale, under hopper or filling tank, or to other loading or unloading areas; operating valves, pumps, conveyor or other loading devices; reading gauges or meters and recording quantities loaded; placing protective padding around articles and securing load to prevent damage; moving levers or pedals to tilt truck body and dump contents; attaching towing devices to other vehicles; communicating with dispatchers by radio; making cash transactions or preparing vouchers for items received or delivered; and recording times of arrival and departure, mileage, fuel consumption, malfunctions and details of load carried.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9175-110	TRUCK DRIVER, GENERAL (motor trans.)	3	4	9175-126	DRIVER, CONCRETE-MIXING- TRUCK (motor trans.)	3	4
9175-114	DRIVER, TANK TRUCK (motor trans.)	3	4	9175-130	DRIVER, DUMP-TRUCK (motor trans.)	3	4
9175-118	TRUCK DRIVER, HEAVY (motor trans.)	3	4	9175-134	DRIVER, TOW-TRUCK (motor trans.)	3	4
9175-122	TRUCK DRIVER, TRACTOR- TRAILER (motor trans.)	3	4	9175-138	TRUCK DRIVER, LIGHT (motor trans.)	3	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	4	4	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4		M 467	B 56	3	4-3	913	2Y
<u>4</u>																	

APTITUDES AND CAPACITIES

Truck Drivers require:

- learning ability to understand and apply vehicle-operating instructions, safety regulations and in some instances, special directives concerning the loading and transportation of hazardous materials;
- spatial perception to visualize relationship between own and other moving vehicles and stationary objects, the movement or placement of objects and materials, and to judge speed and distance when manoeuvring vehicle into confined or congested areas;
- eye-hand co-ordination to manipulate vehicle controls;
- manual dexterity to move hands and arms easily and skilfully when driving truck or tractor-trailer;
- eye-hand-foot co-ordination to move hands and feet simultaneously and rapidly in response to visual stimuli when operating levers, pedals, steering wheel and other vehicle controls;
- good hearing to detect alarm and other signals through traffic noise and to listen to operating trucks or equipment for signs of malfunctions;
- good vision to read gauges and other indicators of truck's operation, and depth perception and colour vision;
- capacity to drive vehicle for extended periods while exposed to the continuous noise of the vehicle itself and other traffic noises;
- adaptability to hazardous conditions found on roads, in traffic and during all types of weather.

TRAINING AND ENTRY REQUIREMENTS

Truck Drivers normally require:

- seven to nine years of general education, although some employers may require up to eleven;
- one to six months of on-the-job training, depending on the type of vehicle to be driven;
- one year of previous driving experience and a good driving record;
- completion of test and examination requirements to hold Provincial Chauffeur's Licence or equivalent.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Truck Drivers who acquire knowledge of business practices may become self-employed as owners of their own vehicle or fleet Those with experience and supervisory potential may advance to 9170-118 FOREMAN, TRUCK DRIVERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer opportunities are limited, but some Truck Drivers may transfer to 9171-110 BUS DRIVER, 9173-110 TAXI DRIVER, 9173-114 CHAUFFEUR, or to appropriate occupations in Group 9179, MOTOR TRANSPORT OPERATING OCCUPATIONS, N.E.C.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to the occupation of Truck Driver, require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried on in relation to machines and techniques;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short-cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

OTHER CLUES

- previous experience in the Armed Forces or other establishments, driving a truck, tank or similar vehicle;
- completion of driver training, automotive mechanics or diesel operating courses in high school.

MOTOR TRANSPORT OPERATING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with activities such as scheduling and dispatching drivers; driving ambulances, motor scooters and all-terrain vehicles; and servicing and delivering rental cars.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILE FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E							C
Motor Transport Dispatching, Scheduling and Planning Occupations																		
9179-110	DISPATCHER, BUS (motor trans.)	<u>3</u>	<u>3</u>	3	3	4	<u>3</u>	4	4	4	5	5	L 456	I	4	5	1	4591
9179-114	ROUTE-PLANNING CLERK (motor trans.)	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>3</u>	3	3	3	5	5	L 456	I	3	6	12	90Y1
9179-118	DISPATCHER, MOTOR VEHICLES (motor trans.)	<u>3</u>	<u>3</u>	<u>4</u>	4	4	<u>3</u>	4	4	4	5	5	S 56	I	3	5	1	4591
9179-122	SCHEDULE MAKER (motor trans.)	<u>3</u>	3	<u>3</u>	<u>3</u>	3	<u>3</u>	4	4	4	5	5	S 4	I	3	5	1	0Y
9179-126	DISPATCHER, TAXICAB (motor trans.)	3	<u>3</u>	4	4	<u>4</u>	<u>3</u>	4	4	4	5	5	L 456	I	3	4	213	25
Miscellaneous Vehicle Operators																		
9179-146	AMBULANCE DRIVER (motor trans.)	<u>3</u>	3	4	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	4	VH 4567	B 56	3	5	941	809Y5
9179-150	DRIVER-UTILITY MAN (motor trans.)	<u>4</u>	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 47	I	3	4	931	2Y
9179-154	HOSTLER, TRUCK (motor trans.)	<u>4</u>	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 2347	O 5	3	4	931	2Y
9179-158	MUSKEG-TRACTOR OPERATOR (motor trans.)	<u>4</u>	4	5	<u>3</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	5	H 347	O 5	3	4	931	2Y
9179-162	CAR-RENTAL SERVICEMAN (motor trans.)	<u>4</u>	4	5	<u>3</u>	<u>4</u>	5	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	5	L 347	I 4	2	4	193	2Y
9179-166	MOTOR-SCOOTER OPERATOR (motor trans.)	4	4	5	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 47	B 5	2	2	931	23Y
Other Motor Transport Operating Occupations																		
9179-186	TRUCK SPOTTER (motor trans.)	4	4	5	<u>4</u>	4	5	4	4	<u>4</u>	<u>4</u>	5	L 456	O	2	2	31	23
9179-190	TRUCK-DRIVER HELPER (motor trans.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	H 234	I 5	2	2	31	23

SUBWAY AND STREET RAILWAY OPERATING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with transporting passengers in subway trains and streetcars over urban and suburban routes. Worker functions include: driving and operating subway train or streetcar in a safe and efficient manner and according to traffic regulations; comparing and observing road or rail conditions, traffic signals and other vehicles; and talking with passengers to provide information concerning routes and fares. Work activities include: driving along routes according to timetables; stopping vehicles and opening and closing doors for passengers; collecting fares, making change and issuing transfers; and picking up and returning fare box at beginning and end of shift.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9191-110	STREETCAR OPERATOR (rail trans.)	3	4	9191-114	MOTORMAN, SUBWAY (rail trans.)	3	4

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>4</u>	3	<u>4</u>	<u>3</u>	3	4	<u>3</u>	3	<u>3</u>	<u>3</u>	4	L 4567	I 5	3	4	923	2Y5
	4			4	5	<u>4</u>	4								93	2Y

APTITUDES AND CAPACITIES

- Subway Motormen and Streetcar Operators require:
- learning ability to understand and apply the knowledge and skills needed to operate subway trains and streetcars, and to exercise considerable judgment with regard to signal systems, traffic regulations and emergency situations;

— numerical ability to make rapid arithmetical calculations when collecting fares or issuing change;

— spatial perception to visualize the relationship of streetcar to other moving or stationary objects, or to visualize the functioning of train and track systems;

— eye-hand-finger co-ordinations and manual dexterity to operate door and start-and-stop controls, issue transfers and make change, manually switch tracks, reposition overhead trolley, or use emergency telephones;

— eye-foot co-ordination to synchronize foot motions with vision to stop or control speed of subway train or streetcar;

— physical capacity to perform light work, and to reach for and handle tickets, transfers, tokens and change;

— facility to speak clearly when talking to passengers, or dispensing information;

— visual acuity, near and far, depth perception and accommodation, to read panel instruments, judge distances, and to control streetcar and subway vehicles safely and efficiently;

— good colour vision to recognize colours and detect colour changes on traffic lights or right-of-way, emergency and danger signals;

— adaptability to working while exposed to continuous and intermittent noises from traffic.

TRAINING AND ENTRY REQUIREMENTS

- Workers in this chapter normally require:
- nine to ten years of general education;

— for 9191-110 STREETCAR OPERATOR, three to six months of on-the-job training; and
- completion of provincial requirements for Chauffeur's Licence;

— for 9191-114 MOTORMAN, SUBWAY, three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement possibilities for workers in this chapter are limited, however, experienced workers may advance to 1176-158 INSPECTOR, TRANSPORTATION SERVICES. Those with supervisory potential may advance to appropriate occupations in Volume I, Unit Group 9190, FOREMEN, OTHER TRANSPORT AND RELATED EQUIPMENT OPERATING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Transfer possibilities are also limited but with some additional training, some workers may transfer to occupations in Chapters 9171, BUS DRIVERS, or 9175, TRUCK DRIVERS. Some Streetcar Operators may transfer to Motorman, Subway.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interest in, and dispositions for work involving the following:

Interests

Streetcar Operators:

- non-social work, carried on in relation to machines and techniques;
- business contact with people such as dispensing information to passengers;
- routine, concrete and organized work.

Motormen, Subway:

- non-social work, carried on in relation to machines and techniques;
- routine, concrete and organized work.

Temperaments

Streetcar Operators and Motormen, Subway:

- repetitive or short-cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

Additionally, for 9191-110 STREETCAR OPERATOR:

- dealing with people in actual job duties beyond giving and receiving instructions such as assisting elderly or infirm people and ensuring order during rush-hour crowds.

MOTORMEN AND DINKEYMEN, EXCEPT RAILWAY TRANSPORT

WORK PERFORMED

This chapter includes occupations concerned with transporting materials in mines, quarries or industrial yards utilizing dinkey engines and similar equipment. Worker functions include: driving dinkey engines to haul and shunt cars of underground or surface railway system; signalling other workers to couple or uncouple cars, activate loading or unloading devices and warn approaching traffic; and handling brakes, switches and levers to regulate speed of cars, to route cars to siding or to open and close bottom doors of car. Work activities include: hoisting or manoeuvring cars into position under discharge chutes or conveyors; attaching cables used to lift or tow cars; inspecting engines; cleaning spillage from track area at loading chute; and performing minor maintenance and cleaning duties.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9193-110	DINKEY-ENGINE OPERATOR (mining & quarrying; rail trans.)	3	4	9193-118	QUENCHING-CAR OPERATOR (trans., n.e.c.)	2	3
9193-114	SHUTTLE-CAR OPERATOR (mining & quarrying)	3	4	9193-122	TRANSFER-HOIST OPERATOR (construction)	2	3
				9193-126	KILN-TRANSFER OPERATOR (furn.; sawmill)	2	3

B

		GED	SVP			GED	SVP
9193-130	DINKEY-ENGINE BRAKEMAN (mining & quarrying; rail trans.)	2	2	9193-134	CAR DROPPER (mining & quarrying; rail trans.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	4	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	4	5	L-M 47	I-B 4567	3-2	4-3	913	2Y 2Y3
B	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	4	M 2347	O-B 567	2	2	31	23

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply the techniques of driving or operating dinkey engines or similar equipment in mines, quarries and industrial yards;
- spatial perception to determine relative position of other moving or stationary objects on tracks to avoid accidents;
- eye-hand co-ordination and manual dexterity to operate vehicle controls or switches, couplings and loading or unloading control levers or other devices;
- physical capacity to perform light to medium work involving the occasional lifting and carrying of weights up to fifty pounds;
- good eyesight, depth perception and colour vision;
- capacity to work both inside and outside while exposed to a wide range of temperatures and weather conditions;
- capacity to work while exposed to the almost continuous noise and

vibration of moving train and intermittent noises of air compressor, pneumatic drilling equipment or blasting activities;

- adaptability to conditions where a variety of hazards may exist such as injury due to falls, proximity of operating equipment, poor lighting and explosives;
- adaptability to working while exposed to the possible injurious effects of dusts, fumes, odours and gases prevalent during industrial processing.

Workers in Cluster A also require:

- facility to hear and speak clearly when directing workers and listening for whistle or alarm signals;
- capacity to work in a moisture-saturated atmosphere.

Workers in Cluster B also require:

- eye-hand-foot co-ordination to climb and balance on ladders or staging or moving equipment;

- capacity to work in awkward positions such as stooping or crouching when coupling or uncoupling cars, opening and closing switches or shovelling materials to clear tracks of spillage.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- seven to ten years of general education;

- three to six months of on-the-job training and related experience.

B

- six to seven years of general education;
- two weeks to one month of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Occupations in Cluster B are entry jobs and advancement may be to occupations in Cluster A for those with ability, interest and initiative. Workers in Cluster A may advance to appropriate occupations in Volume I, Unit Group 9190, FOREMEN, OTHER TRANSPORT AND RELATED EQUIPMENT OPERATING OCCUPATIONS, or 7710, FOREMEN, MINING AND QUARRYING INCLUDING OIL AND GAS FIELD OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profiles.

Transfer

Transfer possibilities for workers in this chapter are limited but, with limited additional training, may be to appropriate occupations in Group 9199, OTHER TRANSPORT AND RELATED EQUIPMENT OPERATING OCCUPATIONS, N.E.C. Possibilities may also be to a few appropriate occupations in Minor Group 771, MINING AND QUARRYING INCLUDING OIL AND GAS FIELD OCCUPATIONS. Workers in Cluster B may also transfer to occupations in labouring and elemental work in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving:

Interests

- working with things and objects;
- routine, concrete and organized work.

Additionally, for Cluster A:

- non-social work carried on in relation to processes, machines or techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

Additionally, for Cluster A:

- the precise attainment of set limits, tolerances or standards.

GROUP 9199

OTHER TRANSPORT AND RELATED EQUIPMENT OPERATING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with a variety of transport activities such as dispatching trucks and other mobile equipment, driving snow-removal equipment, preparing transit vehicles for daily use and operating vehicles such as trackmobiles, sweepers and sidewalk snow-ploughs.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
9199-110	DISPATCHER, MINE (motor trans.; rail trans.)	<u>3</u>	<u>3</u>	4	3	4	<u>3</u>	4	4	4	5	5	S 56	I	3	6	1	4591
9199-114	DISPATCHER, PLANT (trans., n.e.c.)	<u>3</u>	<u>3</u>	4	3	4	<u>3</u>	4	4	4	5	5	L 4567	I	3	5	1	4591
9199-118	DEPOT CLERK (motor trans.; rail trans.)	<u>3</u>	<u>3</u>	<u>3</u>	4	4	<u>3</u>	4	4	4	5	5	L 456	I	3	4	12	0Y1
9199-122	SNOW-REMOVAL-EQUIPMENT OPERATOR (air trans.; gov. serv.)	<u>3</u>	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	H 4567	O 45	3	4	913	2Y
9199-126	HOSTLER, TRANSIT SYSTEM (motor trans.; rail trans.)	4	4	4	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 47	B	2	5	319	20Y
9199-130	SNOW-REMOVAL-EQUIPMENT, URBAN (gov. serv.; trans., n.e.c.)	<u>4</u>	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 47	O 45	3	3	913	2Y
9199-134	TRANSPORT-TERMINAL ATTENDANT (any ind.)	<u>4</u>	<u>4</u>	4	4	4	4	4	4	4	4	5	L 56	B	2	4	23	2
9199-138	SNOW-PLOUGH OPERATOR, SIDEWALK (gov. serv.; trans., n.e.c.)	4	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 47	O 45	2	3	931	23Y
9199-142	STREET-SWEEPER OPERATOR (trans., n.e.c.)	4	4	5	<u>4</u>	4	5	<u>4</u>	4	<u>3</u>	<u>3</u>	5	L 47	O 5	2	3	931	23Y
9199-146	TRACKMOBILE OPERATOR (rail trans.)	4	4	5	<u>4</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	M 347	B 5	2	3	931	23Y

HOISTING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with lifting and moving materials, machines, equipment and products. Worker functions include: driving and operating power-operated cranes, hoists and winches and comparing load weights and hook-up arrangements with safe operating practices to prevent accidents. Work activities include: moving pedals and levers to control hoisting machinery; estimating load weights; setting up rigging; positioning loads ready for lifting; attaching and unhooking loads; and inspecting, adjusting, cleaning and lubricating machinery, cables, ropes and slings.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9311-110	ELECTRIC-GANTRY-CRANE OPERATOR (any ind.)	3	5	9311-138	RIGGER (any ind.)	3	4
9311-114	FLOATING-CRANE OPERATOR (water trans.)	3	5	9311-142	CANTILEVER-CRANE OPERATOR (any ind.)	3	4
9311-118	HOIST OPERATOR (any ind.)	3	5	9311-146	ELECTRIC-MONORAIL-CRANE OPERATOR (any ind.)	3	4
9311-122	LOCOMOTIVE-CRANE OPERATOR (rail trans.)	3	5	9311-150	HIGH-RIGGING MAN (broadcast., motion pic. & stage)	3	4
9311-126	TOWER-CRANE OPERATOR (ship & boat bldg.)	3	5	9311-154	SKIP OPERATOR (iron & steel)	2	4
9311-130	TRACTOR-CRANE OPERATOR (construction; mining & quarrying)	3	5	9311-158	FLYMAN (amuse. & rec)	2	4
9311-134	TRUCK-CRANE OPERATOR (any ind.)	3	5	9311-162	WALKING-BRIDGE-CRANE OPERATOR (any ind.)	2	3
				9311-166	WINCHMAN (rail trans.; water trans.)	2	3
				9311-170	CRANE CHASER (any ind.)	2	3

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
3	4	5	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	<u>3</u>	5	L-M 47	B 56	3-2	5-3	913	2Y
4					4				<u>4</u>	4						2Y3

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the operation of hoisting equipment or rigging procedures and the safety practices associated with these activities;
- spatial perception to visualize the relative positions of objects or materials being moved when operating equipment or guiding equipment operators;
- eye-hand-finger co-ordination and manual dexterity to attach ropes, slings, hooks and shackles;
- eye-hand-foot co-ordination when operating levers and pedals to

- control hoisting machines, or when climbing booms to rig, inspect or lubricate equipment;
- strength to perform light to medium work, depending on the occupation involved, requiring frequent lifting of items weighing up to twenty pounds, or the continuous manipulation of machine levers and pedals;
- far visual acuity and depth perception to see hand signals and to raise, lower and position objects and materials;
- adaptability to working while exposed to loud noises and fumes from machines and to possible hazards such as moving mechanical parts, suspended loads and potential falls.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- seven to ten years of general education;
- for some occupations, a one to three-year apprenticeship program, which may provide for regular periods of full-time attendance at a

- trade school and which may be provincially regulated, or a similar form of on-the-job training;
- completion of provincial certification requirements;
- for other occupations, one month to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in this chapter may advance to occupations requiring higher skills within the chapter. Experienced workers may also advance to 9310-110 FOREMAN, HOISTING OCCUPATIONS, N.E.C. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

With limited additional training, some workers may transfer to other occupations within the chapter or to appropriate occupations requiring similar basic skills in other chapters; such as 7517, LOG HOISTING, SORTING, MOVING AND RELATED OCCUPATIONS; 7711, ROTARY WELL-DRILLING AND RELATED OCCUPATIONS; or 7717, MINING AND QUARRYING: CUTTING, HANDLING AND LOADING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

LONGSHOREMEN, STEVEDORES AND FREIGHT HANDLERS

WORK PERFORMED

This chapter includes occupations concerned with loading and unloading ships barges, trucks, railway cars and other transportation conveyances. Worker functions include: driving and operating industrial trucks, tractors and loaders; tending winches and conveyors; comparing sizes, weights and capacities; recording weight, volume and quantity of materials handled; signalling other workers; and handling or carrying objects or materials. Work activities include assembling cargo in slings or on pallets; attaching hooks or lifting devices; stowing and securing cargo; pushing and pulling machine controls; selecting and coupling hoses and opening valves; and observing flow of materials on conveyors.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9313-110	LONGSHOREMAN (water trans.)	3	5	9313-130	CAR-DUMPER TENDER (motor trans.; rail trans.; storage, n.e.c.)	2	3
9313-114	TOWER-LOADER OPERATOR (water trans.)	2	4	9313-134	LOADER, LIQUIDS (any ind.)	2	3
9313-118	TANKER LOADER (water trans.)	2	4	9313-138	BELTMAN (water trans.)	2	2
9313-122	FURNITURE MOVER (motor trans.)	2	3	9313-142	DUMPER (motor trans.; rail trans.; water trans.)	2	2
9313-126	GRAIN RECEIVER (storage, n.e.c.)	2	3				

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	4	<u>4</u>	4	4	<u>3</u>	4	<u>3</u>	4	5	L-H 2347	I-O 567	3-2	5-2	319	23Y
		5	<u>3</u>		5	4		<u>4</u>	5							
									<u>3</u>							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand loading schedules and instructions for operating machines and equipment;
- spatial perception to visualize the relationship, movement or placement of a variety of objects or materials and to comprehend differences in weights and dimensions of objects to be moved and stowed;
- eye-hand co-ordination to operate controls of machines and equipment;
- manual dexterity to easily and skilfully connect pipes and hoses, open and close valves and push and pull machine controls;
- eye-hand-foot co-ordination for 9313-110 LONGSHOREMEN to drive, operate and position specialized types of vehicles, and for

9313-122 FURNITURE MOVER to drive trucks, position dollies, balance and carry articles in difficult locations and stack and stow objects in vans;

- strength to perform medium to heavy work requiring frequent lifting of equipment weighing up to fifty pounds;
- agility to walk or climb steps, ramps, ladders and walkways;
- capacity to stoop and reach when handling or moving objects, servicing material-handling machinery, attaching lifting gear and securing cargo;
- good vision to perform a variety of duties involving seeing objects over considerable distances;
- adaptability to working inside and outside, in proximity to loud noises and movement or activities of machines, or while exposed to fumes and dust.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- seven to nine years of general education;

- one month to one year of on-the-job training, depending on the occupation and equipment used.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training and experience, workers may advance to other occupations within the chapter. Those who acquire experience with hoisting equipment may advance to appropriate occupations in Chapter 9311, HOISTING OCCUPATIONS, N.E.C. Experienced workers with supervisory potential may advance to 9310-118 FOREMAN, LONG-SHOREMEN, STEVEDORES AND FREIGHT HANDLERS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Some workers may transfer to occupations requiring similar skills within this chapter. Transfer possibilities may also be to appropriate occupations in Chapters 7717, MINING AND QUARRYING: CUTTING, HANDLING AND LOADING OCCUPATIONS, and 9537, PUMPING AND PIPELINE EQUIPMENT OPERATING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- routine, concrete and organized work;
- dealing with things and objects;
- non-social work carried on in relation to machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits or standards.

MATERIAL-HANDLING EQUIPMENT OPERATORS, N.E.C.**WORK PERFORMED**

This chapter includes occupations, not elsewhere classified, concerned with using material-handling equipment to move and store goods and materials in sheds, warehouses or other areas. Worker functions include: driving and operating bulldozers, tractors, loaders and industrial trucks; controlling and tending equipment to sort, load, transfer or convey materials; and comparing sizes weights and capacities of materials and goods being moved. Work activities include: observing operation of machines and movement of materials; reading production and delivery schedules; moving controls to start, stop, steer, direct or regulate movement of machines, equipment or materials; clearing stoppages on conveyor systems; and performing minor adjustments.

LIST OF OCCUPATIONAL TITLES**A**

		GED	SVP			GED	SVP
9315-110	EXPRESS-SORTING-SYSTEM OPERATOR (rail trans.)	4	5	9315-112	AUTOMATIC-PALLET-EQUIPMENT OPERATOR (any ind.)	4 *	5

B

		GED	SVP			GED	SVP
9315-122	COAL-EQUIPMENT OPERATOR (utilities, n.e.c.)	3	4	9315-134	STRADDLE-TRUCK OPERATOR (any ind.)	2	4
9315-126	INDUSTRIAL-TRUCK OPERATOR (any ind.)	3	4	9315-154	WOOD-CHIP UNLOADER (pulp & paper)	2	3
9315-130	TRACTOR OPERATOR (any ind.)	3	4	9315-158	POLE-DISTRIBUTOR OPERATOR (woodworking)	2	3

C

		GED	SVP			GED	SVP
9315-114	CONVEYOR OPERATOR (any ind.)	3	4	9315-162	CEMENT LOADER-AND-SACKER (asbestos & min. wool; cement, stone & clay)	2	2
9315-118	BULK-PLANT TENDER (feed & flour mill; food & bev., n.e.c.; sugar)	3	4	9315-166	CHIP-SILO MAN (pulp & paper)	2	2
9315-138	JACK-LADDER LEVERMAN (sawmill; veneer & plywood)	2	4	9315-170	CONVEYOR MAN (explosives)	2	2
9315-142	BINMAN (mining & quarrying; petrol. & coal prod.)	2	3	9315-174	CONVEYOR TENDER (tobacco)	2	2
9315-146	MALT-HOUSE TENDER (distill., brew. & ferment; food & bev., n.e.c.)	2	3	9315-178	GLASS-CUT-OFF-MACHINE UNLOADER (glass)	2	2
9315-150	TRANSFER MAN (pulp & paper; sawmill)	2	3	9315-182	STACKING-MACHINE TENDER (any ind.)	2	2
				9315-186	MUNITIONS HANDLER (explosives)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	5		S-M 47	I	4-3	5	91	Y9
							<u>4</u>		<u>4</u>									
B	3	4	4	<u>3</u>	4	4	<u>3</u>	4	<u>3</u>	<u>3</u>	5		L-M 2347	B 567	3-2	4-3	913	23Y
	4		5	<u>4</u>		5					4							
C	4	4	4	<u>4</u>	4	4	4	4	<u>3</u>	5	5		L-M 347	I 567	3-2	4-2	319	23Y
			5			5	<u>3</u>		<u>4</u>	4								23

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and carry out loading or delivery schedules and operating instructions for materials-handling equipment;
- spatial perception to operate machines and to visualize relative positions resulting from the movement or placement of objects or materials;
- eye-hand co-ordination to operate equipment or control machinery;
- manual dexterity to push and pull levers, connect pipes and hoses and open and close conveyor gates and valves;
- capacity to work in stooping, kneeling or crouching positions to adjust or service machines, clear stoppages or lift objects;

- capacity to work in noisy locations where moving machinery or objects are potential hazards and where exposure to fumes and dust may cause discomfort.

Additionally, for A:

- form perception to make visual comparisons and discriminations in size and shape of objects and to note defective materials.

Additionally, for B:

- eye-hand-foot co-ordination to operate levers and pedals to steer and control mobile material-handling equipment;
- agility to climb and balance to operate or service elevated straddle-trucks, tractors or conveyors.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- for some occupations, ten to twelve years of general education; and

- three months to one year of on-the-job training and related experience.
- for other occupations, six to eight years of general education; and
- two weeks to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Some workers may advance to higher skilled occupations within this chapter. Experienced workers with supervisory potential may advance to 9310-122 FOREMAN, MATERIAL-HANDLING EQUIPMENT OPERATORS, N.E.C. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to occupations requiring similar skills within the chapter or with additional training, to appropriate occupations in other chapters, for example, 7717-138 BELTWAGON OPERATOR; 7717-142 BOOM-CONVEYOR OPERATOR; and 7717-146 LOADING-MACHINE OPERATOR.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for B and C:

- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards.

Additionally, for A:

- the evaluation of information against sensory or judgmental criteria, as reflected in the operation of automated product sorting and conveying systems from control panels.

Additionally, for B and C:

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instructions, allowing little or no room for independent action or judgment in working out job problems.

PACKAGING OCCUPATIONS, N.E.C.

WORK PERFORMED

This chapter includes occupations, not elsewhere classified, concerned with a variety of packaging activities such as assembling containers, covering articles or goods with protective materials, filling and sealing containers, wrapping, bundling and baling products and materials and preparing and packaging samples for display purposes. Worker functions include: setting up, operating and tending packaging machines; handling containers, labels, packing and sealing materials, and products being packaged; and comparing packaged articles to specified standards to ensure conformance to weight and quantity or for defects in wrapping and packing. Work activities include: changing machine parts such as label-applicator plates, gears and mandrels; adjusting mechanisms that control feed hoppers, rollers, cutting blades and conveyor guides; repairing and replacing damaged jigs, fixtures and other machine parts; opening defective packages and depositing waste in separate containers; crating and wrapping heavy equipment; labelling packaged products; and recording materials used.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9317-110	FILING-MACHINE SET-UP MAN (food & bev., n.e.c.)	3	5	9317-114	PACKING-MACHINE SET-UP OPERATOR (explosives)	3	5
				9317-116	PACKAGING-MACHINE ADJUSTER (any ind.)	3	5

B

		GED	SVP			GED	SVP
9317-118	PRESSURIZED-CONTAINER FILLER (chem., n.e.c.; petrol. & coal prod.)	3	4	9317-174	TOBACCO-PACKING-MACHINE TENDER (tobacco)	2	2
9317-122	CIGARETTE-PACKING-MACHINE TENDER (tobacco)	2	4	9317-178	TYPING-MACHINE TENDER (any ind.)	2	2
9317-126	CRATER (any ind.)	2	3	9317-182	BALING-MACHINE TENDER (any ind.)	2	2
9317-130	CARTON-PACKAGING-MACHINE TENDER (any ind.)	2	3	9317-186	BEER-CARTON PACKER (distill., brew. & ferment)	2	2
9317-134	PACKER, INSULATION (asbestos & min. wool)	2	3	9317-190	BOTTLE PACKER (distill., brew. & ferment)	2	2
9317-138	REWINDING-MACHINE TENDER (wire prod.)	2	3	9317-194	CANDLE WRAPPING-MACHINE TENDER (misc. prod. fab., n.e.c.)	2	2
9317-142	AMPOULE FILLER (pharm. & toil.)	2	3	9317-198	CARDER (misc. prod. fab., n.e.c.)	2	2
9317-146	BARREL FILLER (distill., brew. & ferment.)	2	3	9317-202	COTTON-ROLL-MACHINE TENDER (textile)	2	2
9317-150	PLYWOOD BUNDLER (veneer & plywood)	2	3	9317-206	HOGSHEAD-FILLER AND PACKER (tobacco)	2	2
9317-154	LOCKER-PLANT ATTENDANT (ret. trade)	2	2	9317-210	KEG WASHER (distill., brew. & ferment)	2	2
9317-158	FURNITURE PACKER (trans., n.e.c.)	2	2	9317-214	PACKAGER, BAKERY PRODUCTS (bake prod.)	2	2
9317-162	SNUFF-PACKING-MACHINE TENDER (tobacco)	2	2	9317-218	PACKAGER, MACHINE (any ind.)	2	2
9317-166	STARCH-PRESS TENDER (soap)	2	2	9317-222	PACKAGER, LIQUID (dairy; food & bev., n.e.c.)	2	2
9317-170	CIGAR-WRAPPING-MACHINE TENDER (tobacco)	2	2	9317-226	PLASTIC-PACK MACHINE TENDER (misc. prod. fab., n.e.c.)	2	2

		GED	SVP			GED	SVP
9317-230	SACK FILLER (any ind.)	2	2	9317-250	LABEL CODER (distill., brew. & ferment)	2	2
9317-234	SPOOL WINDER (metal fab., n.e.c.)	2	2	9317-254	NUT AND BOLT ASSEMBLER (metal fab., n.e.c.)	2	2
9317-238	BLUEPRINT TRIMMER (bus. serv.)	2	2	9317-258	PACKAGER, AIRCRAFT PARTS (aircraft)	2	2
9317-242	SNUFF-CAN INSPECTOR (tobacco)	2	2	9317-266	ROLL FINISHER (pulp & paper)	2	2
9317-246	FILM SPOOLER (scient. & ind. equip., n.e.c.)	2	2	9317-274	SHOT BAGGER (explosives)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 347	I 56	3	5	91	Y0
			3		<u>4</u>					4							
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L-M 347	I 56	3-2	4-2	319	23Y
			5		<u>3</u>	5	<u>3</u>		<u>4</u>	4	4						

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply the basic principles related to setting up, adjusting and performing minor repairs to packaging machines;
- spatial perception to observe operation of machines for malfunctions and to align rolls of paper with feeding mechanisms;
- form perception to observe products or materials being packaged for defects in wrapping, packing, shape and size;
- eye-hand-finger co-ordination, finger dexterity and manual dexterity to use hand tools to set up, adjust and operate machinery;

B

- learning ability to understand and apply instructions for tending packaging machines;

- form perception to examine packages for defects;
- eye-hand-finger co-ordination and manual dexterity to use hand and power tools to adjust or clean machines and to position material on machines or place articles in packages.

Workers in both clusters require:

- capacity to perform light to medium work requiring the frequent lifting of objects weighing up to fifty pounds;
- capacity to stoop, kneel or crouch when moving materials to work areas or when feeding and tending machines;
- visual acuity, both near and far, depth perception and colour vision;
- adaptability to either constant or intermittent noise and vibration;
- adaptability to working in situations where the individual is exposed to the risk of injury from operating machinery.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten years of general education;

B

- six months to one year of on-the-job training.
- eight years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Experienced workers in Cluster A with supervisory potential may advance to 9310-126 FOREMAN, PACKAGING OCCUPATIONS, N.E.C. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile. Many occupations in Cluster B are considered entry jobs and advancement is normally to more highly skilled occupations within the cluster or in Cluster A for those workers who demonstrate ability, interest and initiative.

Transfer

With limited additional training, transfer possibilities for workers in this chapter may be to other occupations requiring similar basic skills within the chapter.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving:

Interests

- non-social work carried on in relation to processes and machines;
- dealing with things and objects.

Additionally, for B:

- routine, concrete and organized work.

Temperaments**A**

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, MATERIAL HANDLING, N.E.C.

WORK PERFORMED

This chapter includes occupations in labouring and other elemental work, not elsewhere classified, concerned with loading, moving and packing materials and products. The primary worker function is: handling a wide variety of materials or objects by hand or by the use of special devices and material handling equipment. Work activities include: loading and unloading trucks, pallets, racks and conveyors; distributing materials to work stations; opening containers and sorting and storing articles on shelves; filling freight cars with bulk substances such as wheat or coal; stacking lumber; emptying liquids from tank cars; assembling cartons and containers; packaging products by hand; and cleaning and sweeping work areas.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9318-110	MATERIAL HANDLER, GENERAL (any ind.)	1	2	9318-118	MATERIAL HANDLER, LIGHT (any ind.)	1	2
9318-114	MATERIAL HANDLER, HEAVY (any ind.)	2	2	9318-142	PACKAGER, HAND (any ind.)	1	2

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	4	4	4	4	<u>3</u>	<u>4</u>	<u>3</u>	4	5	L-H 34	I-B	1	2	13	23
		5		<u>3</u>	5				5	4						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple work instructions concerning material handling and packaging;
- form perception to sort articles by condition, size, shape and colour;
- eye-hand-finger co-ordination to make movements accurately and quickly, when handling small objects or when nailing, gluing, sealing or closing boxes;
- finger dexterity to fill containers with small objects, tie bundles or affix labels to packages;

- manual dexterity to stack material, open and close valves and sort materials;
- capacity to perform light to heavy work requiring the frequent lifting of objects weighing up to fifty pounds and occasionally lifting objects weighing up to one hundred pounds;
- capacity to stoop, kneel and crouch when lifting or moving materials to and from shelves, bins and conveyors;
- adaptability to working inside, or both inside and outside in situations such as refrigerated rooms, furnace rooms or in congested work areas.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- six to eight years of general education;
- up to thirty days of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES**Advancement**

These occupations are considered entry jobs, and advancement for workers who demonstrate ability, interest and initiative may be to more highly skilled occupations in Minor Group 931, MATERIAL-HANDLING AND RELATED OCCUPATIONS, N.E.C. Those with supervisory potential may advance to 9310-114 FOREMAN, LABOURERS AND ELEMENTAL WORKERS, MATERIAL-HANDLING. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in this chapter may transfer to other occupations with similar skills and physical requirements within the chapter or to occupations in labouring and elemental work in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to these occupations require significant interests in, and dispositions for work involving:

Interests

- dealing with things and objects;
- routine, concrete and organized work.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instructions allowing little or no room for independent action or judgment in working out job problems.

GROUP 9319

OTHER MATERIAL-HANDLING AND RELATED OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with material-handling activities such as salvaging and storing used building materials, and packing and moving household goods and furniture.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
9319-110	SERVICEMAN (explosives)	4	4	4	4	4	4	<u>3</u>	4	<u>3</u>	<u>4</u>	5	H 3456	I 6	2	2	31	23Y8
9319-114	YARDMAN, USED BUILDING MATERIALS (construction)	4	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	4	4	H 34	O 6	2	2	31	23
9319-118	VAN MAN, MOVING (motor trans.)	4	4	5	4	4	5	<u>4</u>	4	<u>4</u>	<u>4</u>	5	VH 234	B 6	2	2	31	23

TYPESETTING AND COMPOSING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with setting type by hand or machine and composing and arranging type and spacing in preparation for printing. Worker functions include: compiling data from work sheets to determine type and page form requirements; operating or tending linotype, monotype, photo-typesetting, type casting, typesetting and photocomposing machines; working precisely and skilfully when setting and arranging type by hand; and comparing proofs from assembled type for correct type size, style and layout. Work activities include: selecting type fonts; arranging and locking up type in proper sequence for pages; correcting errors in assembled type; and performing minor maintenance and adjustments to typesetting and typesetting machines.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9511-110	COMPOSITOR (print. & pub.)	3	7	9511-114	IMPOSER (print. & pub.)	3	7
				9511-118	MAKE-UP MAN (print. & pub.)	3	7

B

		GED	SVP			GED	SVP
9511-122	LINOTYPE OPERATOR (print. & pub.)	3	7	9511-134	TYPE-CASTING-MACHINE OPERATOR (print. & pub.)	3	6
9511-130	BRAILLE-STEREOGRAPH- MACHINE OPERATOR (print. & pub.; clerical)	4	5	9511-138	PHOTO-TYPESETTER OPERATOR (print. & pub.)	3	5
				9511-142	MONOTYPE-KEYBOARD OPERATOR (print. & pub.)	3	5

C

		GED	SVP
9511-126	LINE-UP MAN (print. & pub.)	3	7

D

		GED	SVP			GED	SVP
9511-146	TYPESETTING-MACHINE TENDER (print. & pub.)	3	4	9511-150	PHOTOCOMPOSING-MACHINE TENDER (print. & pub.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 47	I	3	7	91	0Y
			3	<u>4</u>		<u>3</u>											
B	<u>3</u>	<u>3</u>	4	4	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	5	5	S-L 47	I	4-3	7-5	91	Y02
		4		3	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>4</u>								
C	<u>3</u>	<u>3</u>	3	3	<u>2</u>	3	4	4	<u>3</u>	5	<u>3</u>	L 47	I	3	7	91	Y02
D	4	4	5	<u>4</u>	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 5	3-2	4-3	319	2Y
						5											23Y

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply the techniques of hand composing type and arranging type form, and reasoning ability to determine type size, style and layout from worksheet;
- verbal ability to use and interpret printing terminology and follow a variety of oral and written instructions and specifications;
- spatial perception to visualize, from specifications, the desired arrangement and appearance of final layouts;
- form perception to make accurate visual comparisons of proof forms and layouts against original or manuscript copies, and to detect misalignment of printed material, improper spacing and other compositional defects;
- clerical perception to avoid and detect errors when setting type and reading copy;
- eye-hand-finger co-ordination to read from original copy and simultaneously set type by hand in correct compositional sequence;
- finger dexterity to make rapid, accurate and nimble finger movements when selecting type from type case;
- manual dexterity to use hands skilfully in operating table saws, mitering machines or proof presses;
- physical capacity to extend the arms and hands when selecting and arranging type or operating proof presses, and sufficient strength to lift and carry trays of type and locked page forms weighing up to fifty pounds;
- near visual acuity to avoid errors when selecting and arranging type;
- capacity to work while exposed to continuous noise from typesetting and typesetting machines.

B

- learning ability to understand the principles, operation and applications of typesetting and typesetting machinery and equipment, and reasoning ability to determine causes of malfunctions;
- verbal ability to use and interpret printing terminology and follow a variety of oral and written instructions;
- form perception to detect errors on work tickets or casting instructions relating to size and style of type or length and thickness of lines to be cast;
- clerical perception to avoid and detect errors in setting type and reading copy;
- eye-hand co-ordination and manual and finger dexterity to read from original copy while simultaneously operating keyboard-controlled machines, and to thread tape through feed mechanisms;
- physical capacity to extend the arms and hands to perform minor adjustments to equipment, and to sit for extended periods of time while operating keyboard-controlled machines;

- near visual acuity to avoid errors when reading original copy and simultaneously selecting letters and characters on keyboard-controlled machines;
- capacity to work while exposed to continuous noise from typesetting and typesetting machines;
- adaptability to conditions in which there is a risk of being burned from molten metal and hot-cast slugs, particularly important for 9511-122 LINOTYPE OPERATOR and 9511-134 TYPE-CASTING-MACHINE OPERATOR.

C

- learning ability to understand and apply the procedures for using line-up equipment;
- verbal ability to use and interpret printing terminology and follow a variety of oral and written instructions;
- form perception to make accurate visual comparisons of proof forms and layouts against original or manuscript copies, and to verify alignment of printed material, proper spacing and composition;
- manual dexterity in placing and lining up pages, groups or units of proof;
- colour discrimination when visually examining register of colour form to ensure conformance to key form;
- physical capacity to stand for extended periods while examining and aligning proof form or layout;
- near visual acuity to examine position and alignment of printed materials;
- capacity to work while exposed to continuous noise from machinery.

D

- learning ability to understand the principles and uses of typesetting or photocomposing machines and to exercise judgment in determining causes of malfunctions;
- spatial perception to visualize slugs of composed type as produced by machine from perforated tape;
- form perception to make visual comparisons of operating units to detect malfunctions of keyboard, tape feeding or other machine mechanisms;
- eye-hand co-ordination and finger dexterity to load machines with tape or film and to depress keys on keyboard-controlled machines when clearing stoppages;
- manual dexterity to use hand tools while performing minor adjustments to machines;
- physical capacity to stand for extended periods while tending machines;
- near visual acuity to avoid errors, make adjustments to machines, select type font according to size and face of type, and to set line spacing;
- capacity to work while exposed to continuous noise from machines.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- for most occupations, ten to eleven years of general education;
- a three to six-year apprenticeship program, in some areas provincially regulated, or a similar form of on-the-job training;
- completion of certification or other provincial requirements.
- for lesser skilled occupations, one month to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in this chapter may advance to more skilled occupations within the chapter. Workers with creative ability may advance to occupations concerned with layout and designing in the advertising field. Those with supervisory potential may advance to 9510-130 FOREMAN, TYPESETTING AND COMPOSING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Because of specialization, transfer possibilities for workers in this chapter are usually to occupations requiring similar skills within the chapter or with limited additional training, to other appropriate occupations in Minor Group 951, PRINTING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for Cluster D:

- routine, concrete and organized work.

Temperaments

A, B and C

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

Additionally, for Clusters B and C:

- repetitive or short cycle operations carried out according to set procedures or sequences.

D

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

OTHER REQUIREMENTS

The ability to receive information through oral communication is essential for blind workers in the occupation of 9511-130 BRAILLE-STEREOGRAPH-MACHINE OPERATOR.

PRINTING PRESS OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with printing designs, illustrations and text on paper, textiles, sheet metal and other materials. Worker functions include: setting up, operating or tending cylinder, platen, flat bed, rotary, offset-litho, lithographic, flexographic, gravure or proof printing presses; and comparing preliminary or proof copies with work order specifications to detect printing imperfections and to ensure correct colour registration. Work activities include: obtaining job information from work orders; filling ink fountains with fountains with specified inks; testing and evaluating ink performance; adjusting press controls to rectify printing irregularities; cleaning and maintaining equipment; and feeding blank materials and offbearing printed materials from presses.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9512-110	JOB PRINTER (print. & pub.)	4	8	9512-150	LITHOGRAPHIC PRESSMAN, SHEET METAL (metal stamp., press. & coat; print. & pub.)	3	7
9512-114	PRESSMAN, INK EVALUATION (chem., n.e.c.; print. & pub.)	4	7				
9512-118	PROOF PRESSMAN, PHOTOENGRAVED PLATES (print. & pub.)	4	7	9512-154	PRINTER-SLOTTER OPERATOR (paper prod.; print. & pub.)	3	6
9512-122	ROTOGRAVURE PRESSMAN (print. & pub.)	4	7	9512-158	EMBOSSING-PRINTER (print. & pub.)	3	6
9512-126	OFFSET PRESSMAN (print. & pub.)	4	7	9512-162	FLEXOGRAPHIC-OFFSET PRESSMAN, PLASTIC CONTAINERS (print. & pub.)	3	5
9512-130	PLATEN PRESSMAN (print. & pub.)	4	7				
9512-134	PROOF PRESSMAN, GRAVURE (print. & pub.)	4	7	9512-166	FLEXOGRAPHIC PRESSMAN (paper prod.; print. & pub.)	3	5
9512-138	PROOF PRESSMAN, OFFSET LITHOGRAPHIC (print. & pub.)	4	7	9512-170	FLEXOGRAPHIC-PRINTING- CYLINDER ASSEMBLER (print. pub.)	3	5
9512-142	WEB PRESSMAN (print. & pub.)	4	7				
9512-146	CYLINDER PRESSMAN (paper prod.; print. & pub.)	3	7	9512-174	THERMOGRAPHIC PRINTER (print. & pub.)	3	5

B

		GED	SVP			GED	SVP
9512-178	PRESSMAN, TRANSFERS (print. & pub.)	3	4	9512-194	PLATEN-PRESS TENDER (print. & pub.)	2	4
9512-182	PRINTER, CASES AND LININGS (print. & pub.)	3	4	9512-198	PAPER-FEEDER, PRESS (print. & pub.)	2	3
9512-186	PROOF-PRESS OPERATOR, LETTERPRESS (print. & pub.)	3	4	9512-202	LITHOGRAPHIC-PRESS FEEDER, SHEET METAL (metal stamp., press. & coat; print. & pub.)	2	3
9512-190	SAMPLE-PRINTER, TEXTILES (textile)	3	3				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	L-M 47	15	4-3	8-5	910 91	Y01 Y0
B	4	4	4	4	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L-M 47	156	3-2	4-3	91 319	20Y 23Y
			5		<u>4</u>	5					4						

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply set-up techniques and operating procedures for printing presses;
- spatial perception to set up proof press according to specified page form, and to operate printing presses;
- form perception to make precise visual comparisons and discriminations of proof forms against original copies;
- eye-hand-finger co-ordination to install and align printing plates on cylinders or beds or presses, or to adjust press controls to correct printing imperfections;
- finger dexterity to use feeler gauges or micrometers, to select and arrange type, or to thread materials through press feed mechanisms;
- manual dexterity to use hand tools to set up, adjust or maintain presses;
- colour discrimination to distinguish different colours of ink and to evaluate colour quality of printed material;
- physical capacity to stand for extended periods of time and to lift and carry printing plates, containers of ink or other objects weighing up to fifty pounds;
- near visual acuity to read gauges, thermometers and micrometers, to align printing plates, and to examine proof sheets for printing imperfections;

- capacity to give sustained attention to the functioning of presses while exposed to continuous noises from all types of printing shop machinery.

B

- learning ability to understand and follow written or oral work order instructions and to apply equipment operating or tending procedures;
- form perception to examine proof copy of printed materials for flaws, or printed material against work order specifications;
- eye-hand-finger co-ordination to feed separate sheets of paper into presses, to adjust controls of presses to rectify printing irregularities, or to adjust plates or chases on cylinders or beds of presses;
- finger dexterity to turn thumbscrews during set-up or maintenance operations, or to thread material through press feed mechanisms;
- manual dexterity to use tools to set up, adjust or maintain presses;
- physical capacity to reach for, lift and carry objects such as printing plates, chases, inks, pastes and printed materials weighing up to fifty pounds;
- near visual acuity to examine proof copy or printed materials for flaws or imperfections;
- adaptability to unpleasant and hazardous environmental conditions such as the noise and movement of printing presses and exposure to cleaning solvents that may cause skin irritations.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to eleven years of general education;
- a three to six-year apprenticeship program, in some areas provincially regulated, or a similar form of on-the-job training;

- completion of certification or other provincial requirements.

B

- eight to ten years of general education;
- three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in this chapter may advance to other occupations within their individual cluster, or from Cluster B to A. Experienced workers with supervisory potential may advance to 9510-122 FOREMAN, PRINTING PRESS OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Because of specialization, transfer possibilities for workers in this chapter are limited, but may be to occupations requiring similar skills within the chapter or with additional training, to other appropriate occupations in Minor Group 951, PRINTING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for B:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards as when aligning printing plates on cylinders or beds of presses;
- the evaluation of information against measurable or verifiable criteria, such as using proof copies to detect printing imperfections.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

STEREOTYPING AND ELECTROTYPING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with making printing plates and cylinders for use in presses and other printing equipment. Worker functions include: operating and controlling production machinery such as hydraulic presses and plating, moulding, embossing or impressing equipment used to produce stereotype or electrotype printing plates or cylinders; working to precise tolerances when setting equipment controls and correcting defects; manipulating hand and power tools to finish plates and cylinders; compiling data from work orders; computing the number of times designs are to be repeated around cylinders; and comparing finished products with specified standards to detect and correct flaws. Work activities include: electroplating moulded master plates to produce metal shells; pouring molten metal to form backing for shells; moulding matrices to cast stereotype plates; transferring designs from masters onto printing cylinders by impressing or etching; moulding rubber or plastic plates from metal masters; and mounting, trimming and finishing products to make them ready for use.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9513-110	ELECTROTYPYER (print. & pub.)	4	7	9513-118	CYLINDER-IMPRESSER OPERATOR (print. & pub.)	4	7
9513-114	STEREOTYPYER (print. & pub.)	4	7	9513-122	PLATE FINISHER (print. & pub.)	4	6
				9513-126	CLAMPER (print. & pub.)	4	6

B

		GED	SVP			GED	SVP
9513-130	PRINTING-PLATE MOUNTER (print. & pub.)	3	5	9513-134	BLOCKER, METAL BASE (print. & pub.)	3	5
				9513-138	PRINTING-PLATE MOULDER (print. & pub.)	3	5

QUALIFICATIONS PROFILES

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	5	L-M 47	I 56	4	7-6	910 91	Y01
B	3	4	4	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L-M 47	I 356	3	5	91	Y02
				<u>3</u>	<u>3</u>		<u>3</u>			4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability to understand the principles and operation of production machinery such as hydraulic presses, plating equipment and stereotype-plate casters as well as the printing equipment for which the plates and cylinders are made;
- spatial perception to understand and visualize relationships and arrangements of plates and cylinders when installed and working in printing equipment;
- form perception to discern detail in pictorial or graphic material in order to determine nature of flaws in products such as electroplates, castings or matrices;
- eye-hand co-ordination to make quick and accurate movements in the operation of casting, impressing, trimming and finishing equipment;
- manual dexterity to move the hands easily and skilfully when performing activities such as clamping, inserting, removing and mounting components;
- sufficient strength to perform light to medium work requiring frequent lifting of plates and cylinders up to twenty-five pounds and the tightening of clamping devices by hand;
- near-visual acuity for aligning, machining, finishing, mounting and examining parts;

CHAPTER 9513

- capacity to work inside while exposed to noise and possible injuries from equipment;
- for 9513-134 BLOCKER, METAL BASE, adaptability to working in extremes of heat that may result in bodily discomfort.

Workers in Cluster A also require:

- finger dexterity to manipulate small objects such as hand tools and measuring instruments.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to eleven years of general education;
- a three to six-year apprenticeship program, in some areas provincially regulated, or a similar form of on-the-job training;

- completion of certification or other provincial requirements.

B

- nine to ten years of general education;
- one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, workers in this chapter may advance to occupations requiring higher skills within their individual cluster, or from Cluster B to A. Experienced workers with supervisory potential may advance to 9510-126 FOREMAN, STEREOTYPING AND ELECTROTYPING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Because of specialization, transfer possibilities for workers in this chapter are limited, but may be to occupations requiring similar skills within the chapter or, with additional training, to other appropriate occupations in Minor Group 951, PRINTING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects such as printing plates and cylinders.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

Additionally,

for Cluster A:

- a variety of duties often characterized by frequent change.

for Cluster B:

- repetitive or short cycle operations carried out according to set procedures or sequences.

PRINTING-ENGRAVING, EXCEPT PHOTOENGRAVING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with engraving or etching plates, dies or cylinders used in printing. Worker functions include: analyzing data on production lay-out sheets to determine engraving or etching requirements necessary to produce the desired pattern; working with precision to hand engrave ornamental, pictorial or textual representations on metal plates, cylinders or dies; setting up or operating transfer presses or pantograph machines; and comparing proof impressions of engraved design with original copy to verify conformance to specifications. Work activities include: painting cylinders with acid-resistant coatings to control etching in acid bath; applying acids to etch designs on copper-plated cylinders or zinc plates; and correcting engraving or etching errors.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9514-110	DIE MAKER, HAND (print. & pub.)	4	7	9514-130	ETCHER, GRAVURE (print. & pub.)	4	6
9514-114	ENGRAVER, LETTER (print. & pub.)	4	7	9514-134	PANTOGRAPH SETTER (print. & pub.)	4	6
9514-118	ENGRAVER, PICTURE (print. & pub.)	4	7	9514-138	FLEXIBLE-PLATE ENGRAVER, HAND (print. & pub.)	3	5
9514-122	SIDEROGRAPHER (print. & pub.)	4	7	9514-142	PANTOGRAPHER (print. & pub.)	3	5
9514-126	ENGRAVER, TEMPLATE (print. & pub.)	4	7	9514-146	PRINT-ROLLER REPAIRER (print. & pub.)	3	4
				9514-150	STAGER (print. & pub.)	3	3

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Int.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	3	3	<u>3</u>	<u>2</u>	4	<u>3</u>	<u>2</u>	<u>3</u>	5	3	S-L 47	I 7	4-3	7-3		910	Y0
	4	4	<u>2</u>	<u>3</u>	5		<u>3</u>		4	4						91	

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and apply engraving or etching techniques and reasoning ability to interpret detailed instructions furnished in written, oral or diagrammatic form;
- spatial perception to visualize position of engraved or etched pattern on plates or cylinders while studying copy of specified arrangement on a two-dimensional surface;
- form perception to make accurate visual comparisons when checking proof impressions of engraved design with original copy and to visually detect imperfections in new and used metal printing rollers;
- eye-hand co-ordination when tracing outline of designs or lettering on rubber, plastic or metal plates, or when brushing acid-resistant coating over specified areas of printing cylinders to control etching in acid bath;
- finger dexterity to manipulate the fingers nimbly and accurately when using a variety of engraving and stippling tools, when feeling

- surface of etched cylinders to detect processing defects, or when using straight-edge and pencil to lay out reference lines on plates;
- manual dexterity to use hand tools to set up lathes and pantograph machines or when hand engraving plates or cylinders;
- capacity to lift plates or cylinders weighing up to twenty pounds and to extend the arms and hands when pulling chain of overhead hoists or pushing heavy printing cylinders along hoist tracks;
- near visual acuity to trace outline of designs precisely onto printing plates and to visually detect pinholes, scratches or other flaws during etching process, and depth perception when hand engraving designs to precise depths to produce the desired effect;
- good colour vision for 9514-126 ENGRAVER, TEMPLATE, 9514-142 PANTOGRAPHER and 9514-150 STAGER to accurately recognize colour similarities or differences;
- adaptability to conditions where there are obnoxious fumes and odours from acids, alcohol or acid-resistant paints.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eight to twelve years of general education;
- for most occupations, a three to five-year company sponsored apprenticeship program or a similar form of on-the-job training;

- for other occupations, three months to one year of on-the-job training and related experience.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training workers may advance to higher skilled occupations within the chapter. Experienced workers with supervisory potential may advance to 9510-118 FOREMAN, PRINTING-ENGRAVING, EXCEPT PHOTOENGRAVING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer may be to other occupations requiring similar skills within the chapter or, with limited additional training to appropriate occupations in Chapter 8391, ENGRAVERS, ETCHERS AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- non-social work carried on in relation to processes, techniques and machines;
- dealing with things and objects;
- work offering tangible and productive satisfaction.

Temperaments

- the precise attainment of set limits, tolerances or standards as required when hand engraving designs or lettering on plates or cylinders;
- the evaluation of information against measurable or verifiable criteria, for example, comparing proof impression with original design to verify conformance to standards.

PHOTOENGRAVING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with preparing metal or plastic printing plates or cylinders for letterpress, lithography or gravure printing processes. Worker functions include: working precisely to etch, sensitize and finish printing plates, or to mount or mortise negatives and diapositives; compiling information regarding the techniques, processes and materials required to produce desired layout; operating and controlling equipment such as scanning machines and cameras; manipulating stylus, graver or other small hand tools to correct imperfections on film or plates; and comparing processed film or plate with original copy. Work activities include: photographing copy; developing exposed film; stripping negatives or diapositives; transferring images; and etching printing plates or cylinders.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9515-110	PHOTOENGRAVING FINISHER (print. & pub.)	4	8	9515-142	TRACER-TRANSFERRER (print. & pub.)	4	6
9515-114	SCANNING-MACHINE OPERATOR, COLOUR CORRECTIONS (print. & pub.)	4	7	9515-146	RETOUCHER, PHOTOENGRAVING (print. & pub.)	3	7
9515-118	SCANNING-MACHINE OPERATOR, COLOUR SEPARATIONS (print. & pub.)	4	7	9515-150	STRIPPER (print. & pub.)	3	7
9515-122	PLATEMAKER-PHOTOENGRAVING (print. & pub.)	4	7	9515-154	BRIGHT-TYPE PROCESSOR (print. & pub.)	3	6
9515-126	CAMERAMAN, PHOTOGRAVURE (print. & pub.)	4	7	9515-158	STEP-AND-REPEAT-MACHINE OPERATOR (print. & pub.)	3	5
9515-130	CONTACT PRINTER (print. & pub.)	4	7	9515-162	ELECTROSTATIC CAMERA OPERATOR (print. & pub.)	3	5
9515-134	ETCHER, PHOTOENGRAVING (print. & pub.)	3	7	9515-170	PHOTO-STENCIL MAKER (any ind.)	3	5
9515-138	STRIPPER-LAYOUTER (print. & pub.)	3	7	9515-166	CARBON-TISSUE TRANSFERRER (print. & pub.)	3	5
				9515-174	PLATE GRAINER (metal stamp., press. & coat; print. & pub.)	3	5
				9515-178	PRINT TRANSFERRER (print. & pub.)	3	4

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
3	3	3	3	2	4	3	3	3	5	3		L 47	I	4-3	8-4	91	0Y
		4		3			2			4							
										2							

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to acquire a knowledge of plate making and to apply the techniques involved, and reasoning ability to detect and correct errors;
- spatial perception to visualize final etched printing plates or cylinders while studying copy of layout on a two-dimensional surface;
- form perception to discern detail in pictorial or graphic material in order to detect minute flaws in etched plates or cylinders;
- eye-hand co-ordination to make accurate and precise movements when adjusting cameras or controls on scanning or etching machines;
- finger and manual dexterity to manipulate small objects such as engraving tools or artist's brushes, and to work rapidly and accu-

rately with the hands when using delicate films, strong acids or opaquing liquids;

- colour discrimination to accurately recognize similarities or differences in colours and tones in the preparation of multicolour reproductions;
- physical capacity to do a significant amount of walking or standing, to perform light work requiring frequent lifting of plates and cylinders weighing from ten to twenty pounds, and to extend the arms and hands to control equipment, grasp fine tools, and feel plates and cylinders for finish;
- near-visual acuity to detect imperfections and misalignments, and to do fine hand work and touch-up work.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- for most occupations, ten to eleven years of general education;
- a three to six-year apprenticeship program, in some areas provincially regulated, or a similar form of on-the-job training;

- completion of certification or other provincial requirements;
- for lesser skilled occupations, one month to one year of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement possibilities for workers in this chapter may be to other more highly skilled occupations within the chapter. Workers with creative ability may advance to occupations concerned with layout and design in the advertising field. Those with supervisory potential may advance to 9510-114 FOREMAN, PHOTOENGRAVING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Because of specialization, transfer possibilities are limited, but may be to other occupations requiring similar skills within the chapter, or with additional training, to appropriate occupations in Minor Group 951, PRINTING AND RELATED OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving:

Interests

- non-social work, carried on in relation to processes, techniques and machines;
- dealing with things or objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria, for example, using original copy to verify accuracy of film or plate;
- the precise attainment of set standards, limits, or tolerances.

OTHER REQUIREMENTS

- perseverance and ability to concentrate on specific tasks which

involve a great deal of exacting work applied over long periods of time during the working day.

BOOKBINDING AND RELATED OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with binding books, pamphlets, business forms and other printed matter by hand and machine. Worker functions include: compiling information from production specifications to determine machine set up; working with precision to bind and finish books, documents and periodicals by hand; and setting up, operating or tending machines that cut, fold collate, stitch, staple or bind printed material; and manipulating hand tools to install and adjust guides, clamps, rollers and other parts of bookbinding machines. Work activities include: forming and gathering signatures and sewing them together by hand or machine to form book bodies; loading covers, sheets, signatures or other materials into machines; moving controls to start, stop and regulate machines; applying decorations and lettering to bound books; and examining books for improper arrangement, tears, imperfect bindings and other defects.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

9517-110 BOOKBINDER, HAND
(print. & pub.)

4 8

B

GED SVP

9517-114 CASING-IN-LINE SET-UP
OPERATOR (print. & pub.)

4 7

9517-118 GATHERING-MACHINE SET-UP
OPERATOR (print. & pub.)

GED SVP

3 6

9517-122 STITCHING-MACHINE SET-UP
OPERATOR (print. & pub.)

3 6

C

GED SVP

9517-126 BOOKBINDER, MACHINE
(print. & pub.)

3 6

9517-138 BOOK-SEWING-MACHINE
OPERATOR (print. & pub.)

GED SVP

2 4

9517-130 FOLDING-MACHINE OPERATOR
(print. & pub.)

3 5

9517-142 CUTTING-MACHINE OPERATOR
(print. & pub.)

2 4

9517-134 COLLATING-MACHINE
OPERATOR (print. & pub.)

3 4

9517-146 BINDERY WORKER (print. & pub.)

2 4

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Int.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	L 47	I	4	8	190	Y01	
B	<u>3</u>	4	4	<u>3</u>	<u>4</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	5	L 47	I 5	4-3	7-6	910	Y0	
		3			<u>3</u>													
C	3	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	S-M 47	I 5	3-2	6-4	913	Y0	
	4		5		<u>3</u>	5	<u>3</u>			4							2Y	

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply the principles and techniques of bookbinding, and to acquire the skills needed to manually bind and finish books;
- spatial perception to visualize the final shape and appearance of bound books;
- form perception to detect damaged covers, cloth backing, head bands or other defects when repairing or restoring old books;
- eye-hand co-ordination and finger dexterity to sew signatures by hand or machine and to trim and cut covers or edges of book, using shears or handcutters;
- manual dexterity to skilfully use heated hand tools and stamping machine to decorate book covers.

B and C

- learning ability to understand apply the techniques and procedures required to set up, operate or tend a variety of bookbinding machines and to exercise judgment to determine cause of malfunction;
- form perception to detect imperfect bindings, incomplete cuts, incorrect stitch lengths or torn, loose and uneven pages;
- eye-hand co-ordination to align materials in and hand feed machines, and to use measuring devices or adjust controls to regulate size of cut or machine speed;

- manual dexterity to skilfully use hand tools to set up or maintain equipment.

Additionally,

for workers in Cluster B:

- spatial perception to understand the functional nature of machines and to visualize the relationship of moving parts to detect malfunctions or need for adjustments;
- finger dexterity to turn dials and screws, fan edges of sheets or thread wire through feeding, cutting, stitch forming and driving mechanisms.

for 9517-138 BOOK-SEWING-MACHINE OPERATOR:

- eye-hand-foot co-ordination to position signatures on feed arms and depress pedal to sew, cut stitches and paste and sections.

All workers in this chapter also require:

- physical capacity to perform work ranging from sedentary to medium, and to reach for and handle a variety of tools and materials;
- near visual acuity to set up machines, read measuring devices and detect imperfections in bound material;
- adaptability to working while exposed to high noise levels from bookbinding machinery.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten to twelve years of general education;
- a five-year company sponsored apprenticeship program or a similar form of on-the-job training.

B and C

- eight to eleven years of general education;
- six months to four years of on-the-job training, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Some workers in B and C may be involved in one-the-job training or apprenticeship programs and advance progressively to occupations requiring higher skills. Experienced workers with supervisory potential may advance to 9510-110 FOREMAN, BOOKBINDING AND RELATED OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Workers in B and C may transfer to other occupations requiring similar skills within this chapter. For Bookbinders, Hand, possibilities for transfer are very limited because of the high degree of specialization.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- dealing with things and objects;
- non-social work, carried on in relation to processes, machines and techniques.

Additionally,

for A and B:

- work leading to satisfaction from tangible results.

for C:

- routine, concrete and organized work.

Temperaments**A and B**

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

Additionally,

for A:

- a variety of duties often characterized by frequent change.

C

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, PRINTING AND RELATED ACTIVITIES

WORK PERFORMED

This chapter includes occupations concerned with labouring or other elemental work in printing or related fields. Worker functions include: handling printing cylinders, hand tools and equipment; and feeding printed sheets and other materials into various bindery machines. Work activities include: assisting in the preparation of engraved copper-plated printing cylinders; jogging sheets or signatures to align edges; fanning through sheets to ensure they are in specified order; stacking paper in machines that fold, cut, gather, staple or glue sheets into books, pamphlets, pads or similar products; trimming and rounding sewed signatures; and pasting covers on sewed signatures to form books.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9518-110	BINDERY-MACHINE FEEDER (print. & pub.)	1	2	9518-114	ETCHER HELPER, GRAVURE (print. & pub.)	1	2
				9518-118	FORWARDER (print. & pub.)	1	2

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	L-M 47	I 567	1	2	31	23
	5						3		4	4						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand and follow simple work instructions;
- eye-hand co-ordination and manual dexterity to handle materials, tools, or equipment controls;
- finger dexterity to fan through packs of sheets or signatures to ensure that they are in a specified order;
- sufficient strength to perform work ranging from light to heavy,

requiring the lifting of materials, tools or printing cylinders, and the pushing of handtrucks.

Additionally, for 9518-110 BINDERY-MACHINE FEEDER, capacity to work around noisy machinery, and for 9518-114 ETCHER HELPER, GRAVURE, good vision in order to clean printing cylinders, and adaptability to conditions such as exposure to burns, fumes and odours from acid baths.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- six to eight years of general education;

- on-the-job training ranging from a short demonstration to one month.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

These occupations are considered entry jobs and advancement is normally to more highly skilled occupations in Minor Group 951, PRINTING AND RELATED OCCUPATIONS for workers who demonstrate ability, interest and initiative.

Transfer

Transfer may be to other occupations requiring similar skills within this chapter, or to appropriate occupations in labouring and elemental work found in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- routine, concrete and organized work;
- dealing with things and objects.

Temperaments

- repetitive or short-cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in solving job problems.

PRINTING AND RELATED OCCUPATIONS, N.E.C.

This group includes printing and related occupations, not elsewhere classified, concerned with setting up, operating, tending and feeding printing machines or devices, other than standard printing presses.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes							PA	EC	GED	SVP	Ints.	Temps.				
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Textile Printing Occupations, n.e.c.</i>																		
9519-110	CLOTH PRINTER (textile)	<u>3</u>	3	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	M 4567	I 5	3	7	910	Y0
9519-114	CUTTING-AND-PRINTING-MACHINE SET-UP OPERATOR (textile)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	VH 347	I 5	3	5	910	Y0
9519-118	CLOTH-PRINTING-MACHINE TENDER (textile)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	4	H 47	I 5	2	4	319	23Y
9519-122	CLOTH-PRINTING-MACHINE HELPER (textile)	4	4	5	4	<u>3</u>	4	<u>4</u>	4	<u>3</u>	5	<u>3</u>	H 47	I 5	2	2	31	23Y
9519-126	STRIKE-OFF-MACHINE TENDER (textile)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	4	L 4	I	2	2	319	23Y
9519-130	CLOTH-PRINTING-ROLLER CHANGER (textile)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	<u>4</u>	5	H 4	I	2	2	31	23
<i>Screen-Printing Occupations</i>																		
9519-150	SCREEN-STENCIL CUTTER (and ind.)	3	4	4	<u>4</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	5	4	L 47	I	3	4	19	0Y
9519-154	SCREEN-PRINTING-MACHINE OPERATOR (any ind.)	3	4	4	3	<u>3</u>	4	<u>3</u>	3	<u>3</u>	5	<u>3</u>	L 47	I 7	3	4	91	0Y
9519-158	SCREEN PRINTER, HAND (any ind.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	3	L 47	I 7	2	3	319	20Y
9519-162	SCREEN-PRINTING-MACHINE FEEDER (any ind.)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I 7	2	2	31	23
9519-166	SILK-SCREEN ASSEMBLER (any ind.)	4	4	5	4	<u>4</u>	5	<u>3</u>	4	<u>3</u>	5	5	L 4	I	2	2	31	23Y
<i>Miscellaneous Printing Machine Occupations, n.e.c.</i>																		
9519-186	RULING-MACHINE OPERATOR (print. & pub.)	3	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	<u>3</u>	L 47	I	3	5	91	2Y
9519-190	WALLPAPER PRINTER (paper prod.)	3	4	4	<u>4</u>	<u>3</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	3	M 247	I	3	5	91	0Y
9519-194	PLASTIC PRINTER (plastic prod.)	3	4	4	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	<u>3</u>	M 47	I	3	4	91	0Y2
9519-198	APPROVER (print. & pub.)	<u>3</u>	3	3	<u>3</u>	<u>2</u>	<u>3</u>	4	4	4	5	5	L 47	I 57	3	4	1	09Y
9519-202	OFFSET-DUPICATING-MACHINE OPERATOR (print. & pub.)	3	4	4	4	<u>4</u>	4	<u>3</u>	4	<u>3</u>	5	4	L 47	I	3	4	913	0Y2
9519-206	SIGN WRITER, MACHINE (print. & pub.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	4	L 47	I	3	4	91	2Y
9519-210	TAPE-RULE PRINTER (metal fab., n.e.c.)	3	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	3	<u>3</u>	4	4	M 47	I	3	4	91	0Y
9519-214	EMBOSS-PRINTING-MACHINE TENDER (paper prod.; print. & pub.)	4	4	4	<u>4</u>	<u>4</u>	4	<u>3</u>	4	<u>3</u>	4	5	L 47	I 5	3	4	913	2Y
9519-218	TICKET-MACHINE TENDER (any ind.)	4	4	4	4	<u>4</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	4	4	L 47	I	3	3	319	2Y
9519-222	BOX PRINTER (any ind.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	4	L 47	I	2	3	319	23Y
9519-226	BRONZER TENDER (print. & pub.)	4	4	5	4	<u>3</u>	5	<u>4</u>	4	<u>3</u>	5	<u>3</u>	L 47	I 5	2	3	319	23Y
9519-230	BRAILLE-IMPRESSING-MACHINE OPERATOR (print. & pub.; social wel.)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	5	S 4	I	2	2	319	23Y
9519-234	BALLOON PRINTER (rubber)	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	5	4	S 4	I	2	2	31	23
9519-238	FLOOR-COVERING PRINTER (linoleum prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	4	M 47	I	2	2	319	23Y
9519-242	GLOVE PRINTER (garment & fabric)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	5	5	L 47	I	2	2	319	23Y
9519-246	SHOTGUN-SHELL PRINTING MACHINE TENDER (explosives)	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	5	5	L 47	I 5	2	2	319	23Y
9519-250	TRANSFER-MACHINE TENDER (garment & fabric; shoes)	4	4	5	5	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	L 47	I	2	2	319	23Y

GROUP 9519

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
9519-254	WALLPAPER-SAMPLE-SHEET MAKER (paper prod.)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>3</u>	4	5	M 47	I	2	2	319	23Y
9519-258	PLASTIC-PRINTER HELPER (plastic prod.)	4	4	5	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	4	M 47	I	2	2	31	23Y
9519-262	WALLPAPER-PRINTER HELPER	4	4	5	4	4	5	<u>4</u>	4	<u>3</u>	4	4	M 4	I	2	2	31	23Y

POWER STATION OPERATORS

WORK PERFORMED

This chapter includes occupations concerned with generating electricity for distribution over wide areas, or for local consumption. Worker functions include: operating and controlling electrical generators and power source equipment in hydro, thermal, internal combustion or atomic-energy power plants; analyzing power demands; comparing power output as indicated by instrument readings; and communicating with other workers or power stations to co-ordinate and synchronize system operation. Work activities include: monitoring central switchboard equipment; de-energizing malfunctioning circuits and equipment to ensure safety of maintenance workers; inspecting automatic controls and recorders to verify performance of equipment; actuating switching controls to distribute power load among generators according to power demands; and recording operational data in log books.

LIST OF OCCUPATIONAL TITLES

A

GED SVP

9531-110 LOAD DISPATCHER (elec. power)

4 8

B

GED SVP

9531-114 SUB STATION INSPECTOR
(elec. power)

4 7

9531-118 DIESEL-PLANT OPERATOR
(elec. power)

4 7

9531-122 POWER-SWITCHBOARD
OPERATOR (elec. power)

4 7

9531-126 POWER-SWITCHBOARD
OPERATOR, CHEMICAL
(chem. n.e.c.)

4 7

9531-130 POWER-CONTROL-ROOM MAN
(elec. power)

4 7

9531-134 NUCLEAR-REACTOR OPERATOR
(elec. power)

4 7

9531-138 HYDRO-ELECTRIC-STATION
OPERATOR (elec. power)

4 7

9531-142 TURBINE OPERATOR, STEAM
(elec. power)

4 7

9531-146 POWERMAN, CENTRAL OFFICE
(telecom.)

4 6

9531-150 SUBSTATION OPERATOR
(elec. power)

4 5

9531-154 FEEDER-SWITCHBOARD
OPERATOR (elec. power)

3 6

9531-158 RECTIFIER OPERATOR
(elec. power)

3 5

C

GED SVP

9531-162 POWERHOUSE RUNNER
(elec. power)

3 4

9531-166 SUBSTATION-OPERATOR,
HELPER (elec. power)

2 4

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	4	4	4	5	5	S 456	I	4	8	92	0Y8	
B	<u>3</u>	3	<u>3</u>	3	<u>3</u>	<u>3</u>	<u>4</u>	4	<u>4</u>	5	4	S-M 4567	I 56	4-3	7-5	91	Y0	
			4						<u>3</u>									
C	4	4	4	4	<u>3</u>	<u>3</u>	<u>4</u>	4	<u>4</u>	4	4	M 4567	I	3-2	4	31	2Y	
	3				<u>4</u>	<u>4</u>												

APTITUDES AND CAPACITIES

Workers in this chapter require:

A

- learning ability to understand and apply the principles of power distribution, operation of power distribution control systems, and reasoning ability to forecast probable power loads, based on weather and consumer-demand reports;
- verbal ability to communicate information effectively, orally and in writing;
- numerical ability to quickly and accurately calculate load estimates for demand forecasts;
- spatial perception to visualize the complete operations of power transmission and distribution systems in order to forecast probable load, meet fluctuating demands and avoid interruptions during repairs;
- clerical perception to perceive pertinent detail in written or tabular material, to avoid perceptual errors in copying figures and to read instruments and charts correctly;
- capacity to move the arms easily and readily in order to activate switches and move controls.

B and C

- learning ability to understand and apply the principles of power

generation, and reasoning ability to determine, through instrument readings if equipment is functioning properly;

- form perception to observe power-load information on graphs and charts for comparison with specified values;
- clerical perception to avoid errors in copying figures, reading instruments and recording tabular material;
- eye-hand co-ordination to operate switches and controls while monitoring instruments;
- manual dexterity and the capacity to extend the arms and hands to use testing equipment or to clean and lubricate components;
- physical capacity to perform work ranging from sedentary to medium, requiring pushing, pulling, lifting and carrying equipment weighing up to thirty pounds;
- capacity to speak clearly and receive information accurately;
- good eyesight and colour vision to recognize signals provided by coloured panel lights and to read instruments and charts in bright or dimly lit situations.

Workers in Cluster B also require:

- numerical ability to calculate load estimates for demand forecasts;
- adaptability to working while exposed to environmental noise, and to physical hazards such as falls, moving mechanical parts, or exposed electrical conductors.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A and B

- eleven to twelve years of general education;
- for some occupations, a one to three-year program in power engineering technology at a community college and one or more years of on-the-job training; or,
- a two to four-year company sponsored apprenticeship program, which may be provincially regulated and which provides for regular

periods of attendance at a trade school, or a similar form of on-the-job training;

- completion of provincial or, for nuclear power, federal certification requirements.
- for other occupations, six months to one year of on-the-job training and related experience.

C

- ten years of general education;
- three to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, some workers may advance to occupations requiring higher skills within the chapter. Experienced workers may also advance by taking employment in larger power stations with increased responsibility and remuneration. Those with supervisory potential may advance to 9510-110 FOREMAN, POWER STATION OPERATORS. See also Chapter 990, FOREMEN' OCCUPATIONS, for qualifications profile.

Transfer

Because of specialization, transfer possibilities are very limited, however, some Power Station Operators, qualified in the operation of stationary engines and related equipment, may transfer to appropriate occupations in Chapter 9533, STATIONARY ENGINE AND AUXILIARY EQUIPMENT OPERATING AND MAINTAINING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work, carried on in relation to machines and techniques;
- business contact with people, such as directing power distribution maintenance crews or dispensing information to other generating stations.

Temperaments

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards;
- performing adequately under stress when confronted with the critical or unexpected.

B and C

Interests

- dealing with things and objects.

Additionally,

for Cluster B:

- non-social activities carried on in relation to processes, machines and techniques.

for Cluster C:

- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards.

Additionally,

for Cluster B:

- the evaluation of information against measurable or verifiable criteria, for example, monitoring instruments to detect power irregularities.

for Cluster C:

- repetitive or short cycle operations carried out according to set procedures or sequences.

OTHER REQUIREMENTS

Electric power plants operate twenty-four hours a day, seven days a week and consequently some employees must work nights, holidays and weekends. Workers employed in nuclear-powered electric plants must have special training to work with fissionable, radioactive fuel, in addition to the requirements for conventional steam-generated electric power.

STATIONARY ENGINE AND AUXILIARY EQUIPMENT OPERATING AND MAINTAINING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with providing steam, heat, refrigeration, ventilation, air-conditioning, and electrical and mechanical power to buildings, industrial plants, work sites or other installations. Worker functions include: operating, controlling or tending equipment such as boilers, furnaces, compressors, blowers, pumps, motors and generators; compiling data from recording instruments or from observation of equipment; and analyzing information to ensure specified operating conditions and output are maintained. Work activities include: moving controls to start, stop and regulate equipment; cleaning, lubricating and maintaining machinery in good running order; monitoring temperature, pressure, fuel flow and other instrument readings; and maintaining log on fuel consumption, power output and other operational data.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9533-110	BOILER OPERATOR (utilities, n.e.c.)	4	7	9533-130	COAL-GAS-EXHAUST OPERATOR (petrol. & coal prod.)	3	6
9533-114	REFRIGERATION OPERATION (utilities, n.e.c.)	4	7	9533-134	COMPRESSOR OPERATOR, CAISSON (construction)	3	6
9533-118	DIESEL-ENGINE OPERATOR, STATIONARY (utilities, n.e.c.)	4	7	9533-138	POWERMAN, MOBILE GENERATOR (elec. power)	3	6
9533-122	STATIONARY ENGINEER, GENERAL (elec. power; utilities, n.e.c.)	4	7	9533-142	AUXILIARY-EQUIPMENT OPERATOR (elec. power)	3	5
9533-126	BOILER FIREMAN, PULVERIZED COAL (elec. power; utilities, n.e.c.)	4	7				

B

		GED	SVP			GED	SVP
9533-146	AIR-COMPRESSOR TENDER (any ind.)	3	4	9533-162	HEATING-AND-VENTILATION- EQUIPMENT TENDER (utilities, n.e.c.)	2	3
9533-150	FIREMAN, LOW-PRESSURE (utilities, n.e.c.)	3	4	9533-166	POWERHOUSE HELPER, COAL (utilities, n.e.c.)	2	3
9533-154	HUMIDIFIER MAN (utilities, n.e.c.)	3	3	9533-170	STATIONARY-ENGINEER HELPER (elec. power; utilities, n.e.c.)	2	3
9533-158	STEAM-CLEANING-MACHINE TENDER (construction; utilities, n.e.c.)	2	4	9533-174	TEMPERATURE MAN (utilities, n.e.c.)	2	3

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	3	<u>4</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>4</u>	4	<u>4</u>	4	5	L-M 23467	I-B 3567	4-3	7-5	91	Y0	
		4		<u>4</u>						5								
B	4	4	4	4	<u>4</u>	4	<u>4</u>	4	<u>3</u>	4	5	L-M 2347	I-B 56	3-2	4-3	391	2Y0	
						5				5						31	2Y3	

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to understand and apply procedures for the safe and efficient operation and maintenance of stationary engines, allied systems, and auxiliary equipment, and reasoning ability to determine causes of malfunction and to take appropriate corrective action;
- numerical ability to quickly and accurately compute such things as latent heat, thermal units or combustion efficiency;
- spatial perception to determine relationships in drawings ranging from simple elevations and plan views to isometric scale drawings and to relate this information to operational equipment;
- form perception to visually compare parts for wear, to repair or replace such things as malfunctioning valves;
- clerical perception to avoid mistakes in computing data such as fuel mixtures or pollutant emissions;
- eye-hand co-ordination and manual dexterity to make rapid and accurate adjustments or repairs to equipment;
- physical strength for light to medium work to carry tools and parts, and agility to climb stairs and ladders, and crouch, crawl, kneel or balance on scaffolds to make adjustments or repairs to equipment;
- good hearing to detect and determine malfunctions in equipment;

- good vision to read gauges and charts and judge distances;
- adaptability to exposure to extremes of heat or cold and noise and vibration from fans, turbines and compressors;
- adaptability to physical hazards such as explosions, and to unpleasant atmospheric conditions resulting from fumes, odours, dusts and gases.

B

- learning ability to understand the procedures for the operation of stationary engines and auxiliary equipment, and to carry out instructions correctly;
- form perception to observe wear in parts and detect items in need of repair;
- eye-hand co-ordination and manual dexterity to adjust equipment controls and make repairs;
- physical strength to carry hand tools and parts, agility to climb stairs and ladders, and capacity to manipulate tools while in awkward positions;
- good vision to read gauges and charts in bright or dimly lit locations, monitor equipment for efficiency and inspect parts or components for excessive wear;
- adaptability to conditions involving constant exposure to noise and vibration from operating equipment, and where the danger of possible explosion may be present.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- for some occupations, a one to three-year program of studies at an institute of technology or trade school, and one or more years of on-the-job training; or

- a one to four-year apprenticeship program, which may be provincially regulated and provide for regular periods of attendance at a trade school, or a similar form of on-the-job training;
- completion of provincial certification requirements.
- for other occupations, six months to one year of on-the-job training and related experience.

B

- eight to ten years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With further training, experience and the completion of examinations, workers who are qualified in stationary engineering may advance progressively from Fourth Class to Third, Second and First Class levels. Other workers in this chapter may advance to occupations requiring higher skills or with additional training, become qualified in stationary engineering. Experienced workers with supervisory potential may advance to 9530-114 FOREMAN, STATIONARY ENGINE AND AUXILIARY EQUIPMENT OPERATING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Transfer possibilities may be to other occupations requiring similar skills or qualifications within the chapter, or to employment in different types of establishments or industrial installations where operating equipment such as boilers, pumps and compressors is integral with the process.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving:

A

Interests

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria.

B

Interests

- routine, concrete and organized work such as comparing readings with charts or known specifications and adjusting regulator controls;
- dealing with things and objects.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

WATER AND SANITATION UTILITIES EQUIPMENT OPERATING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with the purification, treatment and distribution of water; and the treatment and disposal of sewage, industrial waste, garbage or refuse. Worker functions include: operating, controlling or tending equipment in water-purification plants, sewage-treatment plants, reservoirs or incinerators; compiling data from recording instruments or from observation of equipment to ensure specified processing conditions are maintained; manipulating valve controls or moving levers and wheels to open and close gates that regulate flow of water, or to start, stop or regulate processing operations; and handling implements to clean and prevent blockage of waterworks intakes. Work activities include: monitoring control panels and interpreting meter and gauge readings; collecting samples of water or sewage at various processing stages for analysis; removing ashes from incinerators; contacting users or irrigation system to determine their requirements; measuring or estimating amount of water diverted to water users; and preparing records on water output, equipment malfunctions and other operational data.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9535-110	WATER-PURIFICATION-PLANT OPERATOR (water works)	4	7	9535-118	DITCH RIDER (water works)	4	4
9535-114	SEWAGE-PLANT OPERATOR (utilities, n.e.c.)	4	6	9535-126	PUMP-STATION OPERATOR (water works)	3	4
				9535-134	WATER-GATE OPERATOR (water works)	3	4

B

		GED	SVP			GED	SVP
9535-130	BASIN TENDER (water works)	3	4	9535-142	INCINERATOR-PLANT TENDER (utilities, n.e.c.)	2	3
9535-138	SEWAGE-PROCESSING-EQUIPMENT TENDER (utilities, n.e.c.)	3	3	9535-146	WATER-INTAKE TENDER (elec. power; water works)	2	2

N.B. Occupation 9535-122 WATER-SERVICE DISPATCHER has been transferred, for Volume II purposes, to Chapter 4199, OTHER CLERICAL AND RELATED OCCUPATIONS, N.E.C.

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	3	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	5	5	L-M 34567	B 6	4-3	7-4	91	0Y4 0Y
B	4	4	4	<u>4</u>	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	5	5	M-H 2347	I-B 467	3-2	4-2	139	23Y
			5		<u>4</u>	5				4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability for workers in A, to understand the principles of design, construction, function and operation of water and sanitation facilities; for workers in B, to apply the techniques of tending and maintaining desilting basins, sewage-processing equipment, incinerator equipment or water intakes;
- spatial perception to visualize and understand the changes effected in rates of flow or supply levels;
- form perception to make visual comparisons between current information on charts and graphs and past records;
- clerical ability to avoid perceptual errors in compiling reports on instrument readings or quality tests;

- eye-hand co-ordination and manual dexterity to turn control knobs, move actuating switches or levers and to position charts and graphs in recording instruments;
- physical fitness to stoop, crouch and reach to repair breaks in irrigation systems and to open and close valves positioned at various heights;
- good visual acuity, near and far, to read information from gauges or charts or to judge distances;
- adaptability to possible exposure to a variety of hazards, or injuries from falls or chemical burns.

Additionally,
for Cluster A:

- eye-hand-foot co-ordination when driving motor vehicles;
- good hearing to identify unusual sounds in operating equipment;

for Cluster B:

- physical strength to perform tasks that frequently require the exertion of up to fifty pounds of force, and, the agility to climb stairs and ladders or balance on catwalks or scaffolds;
- adaptability to working in wet and humid conditions while subjected to odours, fumes and gases from sewage or refuse disposal units.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;

- six months to four years on on-the-job training and related experience, depending on the complexity of the occupation.

B

- eight years of general education;
- one to six months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, some workers in this chapter may advance to occupations requiring higher skills within their individual cluster, or from Cluster B to A. Experienced workers may also advance by moving to similar occupations in more complex facilities. Those with supervisory potential may advance to 9530-118 FOREMAN, WATER AND SANITATION UTILITIES EQUIPMENT OPERATING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

With limited additional training, some workers may transfer to occupations requiring similar basic skills and experience within this chapter, or in other chapters, for example to appropriate occupations in Chapter 8113, MIXING, SEPARATING, FILTERING AND RELATED OCCUPATIONS, MINERAL ORES.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Additionally, for B:

- routine, concrete and organized work.

Temperaments

A

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- precise attainment of set limits, tolerances or standards.

OTHER REQUIREMENTS

Mechanical aptitude, resourcefulness, emotional stability when working alone, especially in small installations, and the ability to adjust to the conditions imposed by rotating shift schedules.

PUMPING AND PIPELINE EQUIPMENT OPERATING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with regulating the pressure and flow of materials such as oil and natural gas through pipeline systems for processing, distribution or storage, and compressing, liquefying and recovering gases for industrial or domestic use. Worker functions include: co-ordinating activities of workers and pumping units to ensure safe and efficient movement of materials; operating or tending pumps, compressors, evaporators, refrigeration units, pneumatic conveyors and pressure regulators; manipulating valves, instrumentation controls and test apparatus. Work activities include: evaluating schedules and reports, and calculating flow, pressure and volume necessary to meet requirements; activating controls to start, stop and regulate transmission equipment; monitoring instruments and making necessary adjustments to gas liquefaction and recovery systems and gauging and testing oil in storage tanks.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9537-110	DISPATCHER, OIL (trans., n.e.c.)	4	7	9537-118	GAS DISPATCHER (utilities, n.e.c.)	4	6

B

		GED	SVP			GED	SVP
9537-114	COMPRESSOR OPERATOR, GAS PROCESSING (chem., n.e.c.; oil & nat. gas; utilities, n.e.c.)	4	7	9537-134	PRESSURE-REGULATOR MAN (utilities, n.e.c.)	3	7
9537-122	PUMPMAN (petrol. & coal prod.)	4	6	9537-138	GAS-PUMPING-STATION OPERATOR (utilities, n.e.c.)	3	6
9537-126	GAS-LIQUEFACTION-AND-REGASIFICATION-PLANT OPERATOR (utilities, n.e.c.; oil & nat. gas)	4	6	9537-142	GAUGER, OIL (petrol. & coal prod.; trans., n.e.c.)	3	6
9537-130	PUMPER, OILFIELD (oil & nat. gas)	3	7	9537-146	PUMPING-STATION OPERATOR (petrol. & coal prod.; trans., n.e.c.)	3	6
				9537-150	TANK-FARM OPERATOR (any ind.)	3	6
				9537-154	GAS-ODORIZATION-AND-SAFETY MAN (utilities, n.e.c.)	3	5

C

		GED	SVP			GED	SVP
9537-158	GAS-TURN-ON-AND-OFF MAN (utilities, n.e.c.)	3	4	9537-166	PUMPMAN, POWDERED MATERIALS (any ind.)	2	3
9537-162	PUMPMAN (any ind.)	3	4	9537-170	PUMPMAN HELPER (any ind.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C							
A	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	4	<u>3</u>	4	4	4	5	5	S 567	I	4	7-6	91	0Y41	
					<u>4</u>													
B	<u>3</u>	4	4	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	5	5	L-M 24567	B 567	4-3	7-5	91	0Y	
		3	3	<u>4</u>	<u>4</u>				<u>4</u>	4	4							
C	3	4	4	4	<u>3</u>	<u>4</u>	<u>4</u>	4	<u>3</u>	5	5	L-M 234	B 567	3-2	4-2	91	20Y	
	4		5	<u>3</u>	<u>4</u>	5	<u>3</u>			4						319	23Y	

APTITUDES AND CAPACITIES

Workers in these clusters require:

A

- learning ability to acquire a knowledge of pipeline system operation and to control the transmission of liquids and gases through these systems to meet delivery schedules and customer demands;
- verbal ability to co-ordinate activities of field workers at pipeline terminals, pumping stations and tank farms and to relay orders to maintenance crews and pumping or compressor stations in case of emergency;
- numerical ability to calculate volumes and rates of flow quickly and accurately, consistent with consumer-demand and equipment capacities;
- spatial perception to visualize system flow based on such factors as temperature, specific gravity and pressure of medium in relation to transmission capacities, and to estimate when tank farm, refinery or customer demand requirements are being met;
- clerical perception to avoid perceptual errors in preparing reports concerning stock and storage capacity, quantities of oil or gas moved or to be moved and in other operational records;
- near visual acuity to observe gauges and other indicators, such as pipeline flow and pressure on electronic-remote control panels and to select appropriate panel controls to regulate system operation.

B

- learning ability to understand oil and gas transmission, liquefaction, compression, and storage operations and to carry out the compression, pumping and storage of oil and gas as instructed or to meet delivery schedules;
- spatial perception to visualize flow of oil or gas through pipeline system to storage or other delivery areas, utilizing knowledge of interconnections and capacities of pipelines, valve manifolds, pumps and tanks and rate of flow of medium as modified by temperatures, pressure and specific gravities;
- form perception to inspect pipelines, pumps, compressors and storage tanks for visual signs of leaks, abnormal pressures or temperatures, or potential hazards such as defective electrical earthing;
- clerical perception to avoid perceptual errors in preparing reports, recording instrument readings and operational changes, and compiling reports on quantities processed, stored and consumed;
- eye-hand co-ordination and manual dexterity to start pumps, turn

valves and handwheels, and use hand tools such as pipe threaders, wrenches and grease guns to operate and maintain pipelines systems and storage facilities;

- sufficient strength to exert up to thirty pounds pressure to move valves, and agility to climb stairs, balance on narrow catwalks and stoop and crouch to reach equipment controls;
- adaptability to working while subjected to loud, staccato compressor noise, exposed to mechanical and electrical hazards, burns from highly volatile materials or equipment frost burns, and atmospheric conditions involving fumes, odours, toxic and malodorous gases;
- good vision and hearing ability to detect, recognize and classify unusual or warning sights and sounds in operating equipment;
- ability to communicate quickly and accurately with superiors and assistants during emergencies.

C

- learning ability to understand and to carry out the transfer or transmission of materials by power-driven pumps;
- for 9537-162 PUMPMAN, spatial perception to observe and interpret flowmeters and pressure and level gauges in order to adjust controls of pumping system;
- form perception to inspect pumps, pipes and valves for leaks and cleanliness, new appliances for proper installation prior to turning on gas supply, and moving parts of machines for lubrication, minor repair and adjustment;
- clerical perception to avoid perceptual errors in reading and recording gas meter readings and serial numbers, and in recording pump operating data such as products and quantities pumped, stocks used and pump operating times;
- eye-hand co-ordination and manual dexterity to turn shut-off valves with wrench, lock gas system with clamping wire and seal, manipulate switches, levers and wheels to start turbines and motor-driven pumps, to tighten pipe connections with hand tools and to connect and disconnect pipes and hoses;
- strength to exert up to thirty pounds pressure to turn valves, agility to climb stairs, balance on narrow catwalks, and to stoop and crouch to reach equipment controls;
- adaptability to working in atmospheric conditions containing fumes, odours, toxic and malodorous gases, exposure to mechanical and electrical hazards, burns from highly volatile materials and exposure to loud variable machine noise.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A and B

- ten to twelve years of general education;
- a two to four-year apprenticeship program, which may be provincially regulated, or a similar form of on-the-job training and related experience;

- completion of provincial certification requirements.

C

- eight to ten years of general education;
- one month to one year of on-the-job training and related experience, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With additional training, some workers in this chapter may advance to occupations requiring higher skills within their individual cluster, or from Cluster C to B and to A. Experienced workers may also advance to larger and more complex installations. Those with supervisory potential may advance to 9530-122 FOREMAN, PUMPING AND PIPELINE EQUIPMENT OPERATING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUAPTIONS, for qualifications profile.

Transfer

With additional training, workers may transfer to other occupations requiring similar basic skills and qualifications within this chapter, or to appropriate occupations in other chapters such as 9533, STATIONARY ENGINE AND AUXILIARY EQUIPMENT OPERATING AND MAINTAINING OCCUPATIONS.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques;
- dealing with things and objects.

Temperaments

A and B

- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

Additionally, for Cluster A:

- the direction, control, and planning of an entire activity or the activities of others;
- a variety of duties often characterized by frequent change.

C

- repetitive or short cycle operations carried out according to set procedures or sequences;
- the precise attainment of set limits, tolerances or standards.

RADIO AND TELEVISION BROADCASTING EQUIPMENT OPERATORS

WORK PERFORMED

This chapter includes occupations concerned with monitoring and controlling the operation of radio and television broadcasting equipment. Worker functions include: operating console to control radio and television broadcast transmitters; setting up portable and mobile equipment for broadcasting from locations distant from studio; analyzing and compiling data obtained from console meters and other indicators to determine if power output, radiated frequency and modulation percentage, fidelity of picture and other conditions meet specified standards; and co-ordinating the routing of programs via microwave or land line according to schedule. Work activities include: studying program schedule; starting and shutting down transmitters and associated equipment; testing and monitoring broadcast output; adjusting controls to obtain optimum quality of transmission; and switching circuits to provide video or sound transmission as required.

LIST OF OCCUPATIONAL TITLES

		GED	SVP			GED	SVP
9551-110	MASTER-CONTROL-EQUIPMENT OPERATOR (broadcast., motion pic. & stage)	4	7	9551-118	VIDEO-CONSOLE OPERATOR (broadcast., motion pic. & stage)	4	7
9551-114	BROADCAST-TRANSMITTER OPERATOR (broadcast., motion pic. & stage)	4	7	9551-122	MOBILE-BROADCAST-EQUIPMENT SET-UP MAN (broadcast., motion pic. & stage)	4	7
				9551-126	SWITCHER (broadcast., motion pic. & stage)	4	7

QUALIFICATIONS PROFILE

Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C						
<u>3</u>	3	4	3	<u>3</u>	4	<u>3</u>	3	4	5	<u>4</u>	S-L 467	B	4	7	917	Y09
<u>2</u>		3	4		<u>3</u>			3	4	<u>3</u>						

APTITUDES AND CAPACITIES

Workers in this chapter require:

- learning ability to understand the techniques and procedures for operating radio and television broadcasting equipment;
- form perception to read meter indicator values and view filmed picture to ensure that it meets established standards;
- clerical perception for 9551-110 MASTER-CONTROL-EQUIPMENT OPERATOR to study and verify program schedule and maintain logs of program organizations;

- eye-hand-finger co-ordination to operate video console, set up portable and mobile equipment, and repair or adjust equipment;
- colour discrimination to evaluate colour quality of transmitted picture;
- good hearing to make test transmission of audio equipment and to ensure that correct sound is transmitted when operating video-switcher console;
- visual acuity, near and far, to adjust framing, contrast, brilliance and fidelity of picture.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

- eleven to twelve years of general education;

- one to three years of courses at a community college, and three or more years of on-the-job training and experience, depending on the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Advancement may be from junior to senior operator levels, or from small to larger or more complex broadcasting stations. Experienced workers with supervisory potential may advance to 9550-110 SUPERVISOR, RADIO AND TELEVISION BROADCASTING EQUIPMENT OPERATORS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Experienced operators who acquire the necessary technical knowledge may transfer to servicing equipment or instructing in audio-visual sections of educational facilities. Others may transfer to specialized work in the control and surveillance of industrial processes or traffic control applications.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to broadcasting equipment and techniques;
- dealing with things and objects;
- scientific and technical work.

Temperaments

- the precise attainment of set limits, tolerances or standards, for example, ensuring that broadcast frequencies are within the limits imposed by licensing authorities;
- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria, such as determining the quality of sound and colour transmission that will meet audience expectations.

TELEGRAPH OPERATORS

WORK PERFORMED

This chapter includes occupations concerned with transmitting and receiving signals or messages via radiotelegraph, radiotelephone or telegraph. Worker functions include: copying incoming messages by hand or transcribing them by typewriter and recording messages sent and received in log-book; speaking over radiotelephone to send messages or to obtain clarification of message received; and manipulating and operating telegraph key and equipment controls. Work activities include: calling stations to which message is to be passed; adhering to specified operating procedures; acknowledging calls and receiving traffic for own station, marking messages for local distribution and telephoning messages to local addressees.

LIST OF OCCUPATIONAL TITLES

			GED	SVP				GED	SVP
9553-110	RADIOTELEGRAPH OPERATOR	(telecom.)	4	6	9553-114	RADIOTELEPHONE OPERATOR	(telecom.)	3	5
					9553-118	TELEGRAPHER	(telecom.)	3	5

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
3	3	4	4	4	2	3	2	4	5	5		S 456	I	4-3	6-5	93	Y2
			5				3	3									

APTITUDES AND CAPACITIES

- Workers in this chapter require:
 - learning ability to understand and apply communications manual instructions and operating procedures and regulations;
 - verbal ability to communicate effectively when transmitting or receiving messages via radiotelegraph;
- clerical perception to carefully review information, transcribe and transmit messages with speed and accuracy;
 - finger dexterity to manipulate code keys nimbly and precisely;
 - good hearing to discriminate and select sounds.

TRAINING AND ENTRY REQUIREMENTS

- Workers in this chapter normally require:
 - eleven to twelve years of general education;
- a one to two-year program of training in radio operation and practical experience;
 - completion of certification requirements conducted by the Federal Department of Communications.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement	Transfer
Advancement possibilities for workers in this chapter are limited, but may be to occupations requiring higher skills within the chapter or, with experience and additional training, to occupations such as 9113-122 AIRLINE-RADIO OPERATOR, 9159-114 RADIO OFFICER, and 9135-110 CENTRALIZED-TRAFFIC CONTROLLER. Those with supervisory potential may advance to 9550-118 SUPERVISOR, TELEGRAPH OPERATORS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.	Transfer possibilities are also limited but may be between private companies and provincial or federal government agencies.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to equipment and techniques such as the transmission and reception of messages and signals;
- routine, concrete and organized work.

Temperaments

- the precise attainment of set limits, tolerances or standards;
- repetitive or short cycle operations carried out according to set procedures or sequences.

SOUND AND VIDEO RECORDING AND REPRODUCTION EQUIPMENT OPERATORS

WORK PERFORMED

This chapter includes occupations concerned with recording and reproducing video images and audio for radio and television broadcasting, and motion picture, tape and phonograph-record production. Worker functions include: operating and controlling video and audio recording and reproduction equipment; tending duplicating equipment to reproduce copies from master tapes or discs; analyzing data from scripts to determine sound and picture requirements; and compiling information concerning quality, quantity and identity of tapes produced. Work activities include: determining acoustics of premises and positioning microphones accordingly; synchronizing pictures and sound on tape-tracks; editing video and audio tapes; observing meters on consoles; monitoring audio signals and video images; and reporting equipment malfunction to producer.

LIST OF OCCUPATIONAL TITLES

A							
		GED	SVP			GED	SVP
9555-110	SOUND MIXER (broadcast., motion pic. & stage)	4	7	9555-130	SOUND-EFFECTS MAN (broadcast., motion pic. & stage)	4	6
9555-114	STEREO-TAPE EDITOR (misc. prod. fab., n.e.c.)	4	7	9555-134	MASTER-RECORD CUTTER (misc. prod. fab., n.e.c.)	4	5
9555-118	RE-RECORDING MIXER (broadcast., motion pic. & stage)	4	7	9555-138	SOUND-RECORDING-EQUIPMENT OPERATOR (broadcast., motion pic. & stage)	4	5
9555-122	VIDEO-AND-SOUND RECORDER (broadcast., motion pic. & stage)	4	7	9555-142	TELECINE OPERATOR (broadcast., motion pic. & stage)	4	5
9555-126	VIDEO-RECORDING-EQUIPMENT OPERATOR (broadcast., motion pic. & stage)	4	7	9555-146	DUBBING-MACHINE OPERATOR (broadcast., motion pic. & stage)	3	4
				9555-150	SOUND EDITOR (broadcast., motion pic. & stage)	3	4
B							
		GED	SVP				
9555-154	TAPE DUPLICATOR (misc. prod. fab., n.e.c.)	2	3				

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	3	4	3	3	4	<u>3</u>	<u>3</u>	3	5	5	S-L 4567	I	4-3	7-4	971	90Y
	<u>2</u>		3								4						
B	4	4	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	3	5	5	L 47	I	2	3	319	23Y

APTITUDES AND CAPACITIES

- Workers in this chapter require:
- A

— learning ability to understand and apply the techniques of recording and reproducing video images and audio by use of electronic equipment;

— eye-hand-finger co-ordination and finger dexterity to set up recording and reproducing equipment, to operate controls and handle tapes or films, and to repair and maintain equipment using hand tools;

— good hearing to monitor audio console to regulate volume and quality of sound and balance with picture, and to eliminate or reduce extraneous sounds;

- near and far visual acuity to monitor moving picture screen or video-tape picture, to use densitometer, sensitometer or acoustic interferometer, and for 9555-134 MASTER-RECORD CUTTER, to observe cutting process using microscope to ensure that grooves cut are level and even;
- colour vision to monitor colour video tape.

Tape Duplicators:

- learning ability to acquire and apply the techniques of operating a tape-recording machine to produce copies from master tapes;
- form perception to set controls and consult charts to determine blank type requirement;
- eye-hand-finger co-ordination and finger dexterity to set controls and operate tape-recording machines, and to clean tape heads and guides of machine;
- near visual acuity to position tape and thread machine and to clean machine.

TRAINING AND ENTRY REQUIREMENTS

Workers in this chapter normally require:

A

- ten to twelve years of general education;

- six months to four years of on-the-job training and related experience, depending on the complexity of the occupation.

B

- seven to eight years of general education;
- one to three months of on-the-job training.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

With experience and additional training, workers in this chapter may advance to other occupations within the chapter. Experienced workers with supervisory potential may advance to appropriate supervisory positions such as 9550-114 SUPERVISOR, SOUND RECORDING AND REPRODUCTION EQUIPMENT OPERATORS.

Transfer

Transfer for some workers may be between radio and television and the sound-and-picture departments of motion picture production. Other possibilities may be to appropriate occupations requiring similar basic skills in other chapters, for example, 9551-118 VIDEO-CONSOLE OPERATOR, 9551-126 SWITCHER, or 2799-114 AUDIOVISUAL SPECIALIST.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in this chapter require significant interests in, and dispositions for work involving the following:

A

Interests

- non-social work carried on in relation to sound and video recording machines and techniques;
- scientific and technical work;
- dealing with things and objects.

Temperaments

- the evaluation of information against sensory or judgment criteria;
- the evaluation of information against measurable or verifiable criteria;
- the precise attainment of set limits, tolerances or standards.

B

Interests

- routine, concrete and organized work;
- dealing with things and objects such as master tapes, tape heads and cassettes;
- non-social work carried on in relation to machines and techniques.

Temperaments

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

MOTION-PICTURE PROJECTIONISTS

WORK PERFORMED

This chapter includes Motion-Picture Projectionists concerned with producing co-ordinated motion picture and sound entertainment. Worker functions include: controlling the operation of projection and sound-reproduction equipment; and comparing the quality of projected picture and the clarity and level of sound with acceptable standards. Work activities include: visually examining and listening to equipment before use and in operation; threading film through projector; splicing broken film; oiling machine parts; and making minor adjustments and repairs to equipment.

LIST OF OCCUPATIONAL TITLES

		GED	SVP
9557-110	MOTION-PICTURE PROJECTIONIST (amuse. & rec.; broadcast., motion pic. & stage)	4	6

QUALIFICATIONS PROFILE

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	D							
<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	3		L 4567	I 6	4	6	91	0Y

APTITUDES AND CAPACITIES

- Motion-Picture Projectionists require:
 - learning ability to understand the operation of motion picture projection equipment and reasoning ability to determine causes of malfunctions and to take corrective action;
 - spatial perception to visualize cause of malfunctions and to make needed adjustments;
 - form perception to focus projected images and to examine film and parts of equipment for flaws and wear;
 - eye-hand-finger co-ordination to make rapid and accurate adjustments to equipment;
- finger dexterity to nimbly lead the film through the picture aperture, around rollers and sprocket wheels;
 - manual dexterity to move switches and controls and use hand tools in order to adjust or repair equipment;
 - near and far visual acuity to examine operating equipment, to observe projected images and make required adjustments to controls;
 - adaptability to possible physical hazards such as fumes, heat and fires that could originate in and around projection equipment.

TRAINING AND ENTRY REQUIREMENTS

- Motion-Picture Projectionists normally require:
 - seven to nine years of general education;
- a six months to one year apprenticeship program, or a similar form of on-the-job training;
 - completion of licensing requirements.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement	Transfer
Advancement for Motion-Picture Projectionists may be to positions requiring the operation of more complex equipment in larger establishments.	Transfer possibilities are limited and may be from one establishment to another with minor variations in duties.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to this occupation require significant interests in, and dispositions for work involving the following:

Interests

- work which is basically non-social in nature and is carried on in relation to machines and techniques;
- dealing with things and objects.

Temperaments

- the evaluation of information against measurable or verifiable criteria, such as determining film running times and proper equipment performance;
- the precise attainment of set limits or tolerances.

GROUP 9559

ELECTRONIC AND RELATED COMMUNICATIONS EQUIPMENT OPERATING OCCUPATIONS, N.E.C.

This group includes electronic and related communications-equipment-operating occupations, not elsewhere classified, concerned with activities such as investigating sources of interference to radio and television reception and commercial communications equipment; operating equipment to transmit and receive weather maps, photographs and printed material; and moving microphones or adjustable booms during live productions.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS																
		Aptitudes										PA	EC	GED	SVP	Ints.	Temps.	
		G	V	N	S	P	Q	K	F	M	E	C						
9559-110	RADIO-INTERFERENCE INVESTIGATOR (gov. serv.)	<u>3</u>	3	4	<u>3</u>	4	4	4	3	4	3	5	L 456	B	4	7	917	0Y95
9559-114	AUTOMATIC-DATA-TRANSCIVER OPERATOR (telecom.)	<u>3</u>	3	4	4	<u>3</u>	4	<u>4</u>	4	4	5	5	L 47	I	4	5	91	0Y
9559-118	MICROPHONE-BOOM MAN (broadcast., motion pic. & stage)	<u>3</u>	3	4	<u>3</u>	4	4	4	4	<u>4</u>	4	5	M 24	I	4	6	91	9Y

PHOTOGRAPHIC PROCESSING OCCUPATIONS

WORK PERFORMED

This chapter includes occupations concerned with processing exposed photographic still and motion-picture film. Worker functions include: compiling information to regulate exposure or immersion times; comparing reprints to determine colour, density and balance; working precisely to retouch film negatives and produce positive prints; operating or tending printing, photocopying or reproducing machines; manipulating splicing and number perforating equipment; and handling prints and identification tags. Work activities include: moving controls to start, stop, adjust or regulate film processing speeds; and cutting, mounting and finishing film negatives and prints.

LIST OF OCCUPATIONAL TITLES

A

		GED	SVP			GED	SVP
9591-110	PHOTOGRAPH ENLARGER (misc. serv.)	3	7	9591-118	NEGATIVE RETOUCHER (misc. serv.)	3	6
9591-112	NEGATIVE-CONTACT-FRAME OPERATOR (bus. serv.; print. & pub.)	4	6	9591-122	COPY CAMERAMAN (misc. serv.)	3	5
9591-114	FILM DEVELOPER (misc. serv.)	3	6	9591-126	MOTION-PICTURE-FILM PRINTER (broadcast., motion pic. & stage)	3	4
				9591-130	MOTION-PICTURE-FILM DEVELOPER (broadcast., motion pic. & stage)	3	4

B

		GED	SVP			GED	SVP
9591-134	PRINTER TENDER (misc. serv.)	3	3	9591-150	FILM-PRINTING-MACHINE TENDER (misc. serv.)	2	3
9591-138	X-RAY-PLATE DEVELOPER (misc. serv.)	3	3	9591-154	FILM SPLICER (misc. serv.)	2	2
9591-142	NEGATIVE CUTTER (broadcast., motion pic. & stage; misc. serv.)	2	4	9591-158	PRINT FINISHER (misc. serv.)	2	2
9591-146	FILM-DEVELOPING-MACHINE TENDER (misc. serv.)	2	3	9591-162	FILM CUTTER (misc. serv.)	2	2
				9591-166	FILM MOUNTER (misc. serv.)	2	2
				9591-170	FILM NUMBERER (misc. serv.)	2	2

QUALIFICATIONS PROFILES

	Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
	G	V	N	S	P	Q	K	F	M	E	C						
A	<u>3</u>	4	4	3	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	3	L 47	I	4-3	7-4	910 91	Y09
B	4	4	4	4	4	5	<u>4</u>	<u>4</u>	<u>3</u>	5	5	L 47	I	3-2	4-2	319 31	23Y
			5			4	<u>3</u>		<u>4</u>	4							

APTITUDES AND CAPACITIES

Workers in these clusters require:

- learning ability for Cluster A, to understand and apply the principles and procedures for processing photographic film; and for Cluster B, to understand and carry out the more routine film processing tasks;
- eye-hand-finger co-ordination and manual dexterity to adjust controls of film processing equipment and to perform touch up work in prints and negatives;
- finger dexterity to manipulate small objects, thread film through processing equipment, remove film from containers and strip paper backing from film surface;

- colour vision for those who process colour photographs;
- adaptability to working while exposed to skin irritation and fumes and odours caused by volatile chemicals used in film processing solutions.

Additionally, for Cluster A:

- form perception to process film and examine negatives and prints for defects.

TRAINING AND ENTRY REQUIREMENTS

Workers in these clusters normally require:

A

- ten to twelve years of general education;
- six months to two years or more of on-the-job training and related experience, depending on the complexity of the occupation.

B

- eight to ten years of general education;
- two weeks to six months of on-the-job training, depending on the complexity of the occupation.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Workers in Cluster B who have the necessary ability and interest may, with additional training, advance to occupations requiring higher skills within that cluster or in Cluster A. Experienced workers may advance to supervisory positions in commercial establishments, or to 9590-110 FOREMAN, PHOTOGRAPHIC PROCESSING OCCUPATIONS. See also Chapter 990, FOREMEN OCCUPATIONS, for qualifications profile.

Transfer

Because of specialization, transfer opportunities for workers in these clusters are limited, but may be between commercial photographic laboratories and those of government organizations, or to other occupations requiring similar skills in other chapters.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry to occupations in these clusters require significant interests in, and dispositions for work involving the following:

Interests

- non-social work, carried on in relation to processes, machines and techniques such as the techniques of photographic film processing;
- dealing with things and objects.

Additionally, for Cluster B:

- routine, concrete and organized work.

Temperaments

A

- the precise attainment of set limits, tolerances or standards;
- the evaluation of information against measurable or verifiable criteria;
- the evaluation of information against sensory or judgmental criteria such as appraising the degree of colour and shade combinations desired.

B

- repetitive or short cycle operations carried out according to set procedures or sequences;
- doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems;
- the precise attainment of set limits, tolerances or standards.

OTHER CLUES

Some jobs may be performed in the dark to prevent damage to exposed film; some processing laboratories may employ blind workers for film numbering and film stripping.

MISCELLANEOUS CRAFTS AND EQUIPMENT OPERATING OCCUPATIONS, N.E.C.

This group includes craft and equipment operating occupations, not elsewhere classified, concerned with activities such as making scale models of architectural designs, and props for motion pictures, television and theatre productions; operating and maintaining racetrack totalizer systems; and inspecting motion-picture film and colour slides for quality and processing defects.

QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS

OCCUPATIONAL TITLES		Aptitudes											PA	EC	GED	SVP	Ints.	Temps.
		G	V	N	S	P	Q	K	F	M	E	C						
<i>Miscellaneous Crafts And Equipment Operating Occupations</i>																		
9599-110	TOTALIZATOR-SYSTEMS ANALYST (telecom.)	<u>2</u>	<u>3</u>	3	<u>2</u>	<u>3</u>	<u>3</u>	4	4	4	5	5	L 4567	I 6	4	8	971	09Y45
9599-114	MODEL MAKER (prof. & tech., n.e.c.)	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	3	M 47	I	4	7	871	0Y91
9599-118	PROP MAKER (broadcast., motion pic. & stage)	<u>3</u>	3	<u>3</u>	<u>2</u>	<u>3</u>	4	<u>3</u>	<u>3</u>	<u>3</u>	5	3	M 47	B	4	7	891	0Y1
9599-122	SPOTLIGHT OPERATOR (broadcast., motion pic. & stage)	3	4	4	<u>3</u>	4	5	<u>3</u>	4	<u>3</u>	5	3	M 2346	I	3	4	13	0Y
9599-126	STERILIZER (pharm. & toil.; scient. & ind. equip., n.e.c.)	4	4	4	<u>4</u>	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4	5	M 4	I 3	2	3	319	23Y
<i>Inspectors</i>																		
9599-150	FILM-QUALITY INSPECTOR (broadcast., motion pic. & stage; misc. serv.)	3	4	5	4	<u>3</u>	5	<u>4</u>	<u>4</u>	<u>3</u>	5	<u>3</u>	L 47	I	3	4	931	0Y2
9599-154	COLOUR-FILM ANALYZER (broadcast., motion pic. & stage; misc. serv.)	<u>3</u>	4	3	4	<u>3</u>	<u>4</u>	4	4	4	5	<u>3</u>	L 47	I	3	6	91	0Y9
9599-158	MOTION-PICTURE-FILM EXAMINER (broadcast., motion pic. & stage)	3	4	5	4	<u>4</u>	4	<u>4</u>	<u>4</u>	<u>4</u>	5	3	L 47	I	3	5	13	0Y2
9599-162	PRINT INSPECTOR (misc. serv.)	3	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	4	4	S 47	I	3	5	13	0Y2
9599-166	DUPLICATE-FILM EXAMINER (broadcast., motion pic. & stage)	4	4	5	4	<u>4</u>	5	<u>4</u>	4	<u>4</u>	5	<u>3</u>	S 47	I	2	3	13	0Y2

FOREMEN OCCUPATIONS

(Includes Foremen Unit Groups 7180 through 9910)

WORK PERFORMED

This chapter includes occupations concerned with supervising and co-ordinating activities or workers engaged in farming; forestry and logging; mining and quarrying; processing; machining; product fabricating, assembling and repairing; construction; and operating transportation, material handling, printing, utilities and communications equipment. Worker functions include: determining assignments, manpower requirements, work methods, materials and schedules required; and assigning duties to workers, interpreting work procedures and ensuring tasks are satisfactorily completed. Work activities include: requisitioning materials and supplies; hiring and training workers; setting up machines and equipment; inspecting materials received; enforcing safety regulations; preparing production reports; recommending measures to improve work methods, equipment performance, quality of product or service, and working conditions; and conferring with workers to resolve complaints and grievances.

LIST OF OCCUPATIONAL TITLES*Foremen: Other Farming, Horticultural
and Animal-Husbandry Occupations*

7180-110	FOREMAN, DAIRY-FARM WORKERS (agric.)
7180-114	FOREMAN, FIELD CROP AND VEGETABLE WORKERS (agric.)
7180-118	FOREMAN, LIVESTOCK WORKERS (agric.)
7180-122	FOREMAN, NURSERY AND RELATED WORKERS (agric.)
7180-126	FOREMAN: ORCHARD, VINEYARD AND RELATED TREE AND SHRUB-CROP WORKERS (agric.)
7180-130	FOREMAN, POULTRY-FARM WORKERS (agric.)
7180-134	FOREMAN, PARK (agric.; amuse. & rec.)
7180-138	CUSTOM HARVESTER, GRAIN (agric.)
7180-142	FOREMAN, SPRAYING (agric.)
7180-146	SHEEP-SHEARING CONTRACTOR (agric.)
7180-150	SUPERINTENDENT, GREENS (agric.)
7180-154	FOREMAN, ZOO (agric.; amuse. & rec.)

Foremen, Forestry and Logging Occupations

7510-110	FOREMAN, FORESTRY-CONSERVATION OCCUPATIONS (forest. & log.)
7510-114	FOREMAN, LABOURERS AND OTHER ELEMENTAL WORKERS (forest. & log.)

7510-118	FOREMAN, LOG-HOISTING, SORTING, MOVING AND RELATED OCCUPATIONS (forest. & log.)
7510-122	FOREMAN, LOG-INSPECTING, GRADING, SCALING AND RELATED OCCUPATIONS (forest. & log.)
7510-126	FOREMAN, TIMBER-CUTTING AND RELATED OCCUPATIONS (forest. & log.)

*Foremen, Mining and Quarrying Including Oil
and Gas Field Occupations*

7710-110	FOREMAN, BLASTING OCCUPATIONS (construction; mining & quarrying; oil & nat. gas)
7710-114	FOREMAN, CUTTING AND LOADING OCCUPATIONS (mining & quarrying)
7710-118	FOREMAN, LABOURERS AND OTHER ELEMENTAL WORKERS (mining & quarrying)
7710-122	FOREMAN, OTHER ROCK AND SOIL DRILLING OCCUPATIONS (construction; mining & quarrying)
7710-126	FOREMAN, ROTARY WELL-DRILLING AND RELATED OCCUPATIONS (oil & nat. gas)

Foremen, Mineral Ore Treating Occupations

8110-110	FOREMAN, CRUSHING AND GRINDING OCCUPATIONS, MINERAL ORES (iron & steel; non-ferrous metal)
-----------------	---

8110-114 FOREMAN, INSPECTING, TESTING AND GRADING OCCUPATIONS, MINERAL ORES (iron & steel; non-ferrous metal)

8110-118 FOREMAN, LABOURERS AND OTHER ELEMENTAL WORKERS, MINERAL ORES (iron & steel; non-ferrous metal)

8110-122 FOREMAN, MELTING AND ROASTING OCCUPATIONS, MINERAL ORES (iron & steel; non-ferrous metal)

8110-126 FOREMAN, MIXING, SEPARATING, FILTERING AND RELATED OCCUPATIONS, MINERAL ORES (iron & steel; non-ferrous metal)

Foremen, Metal Processing and Related Occupations

8130-110 FOREMAN, FURNACEMEN, METAL (iron & steel; non-ferrous metal)

8130-114 FOREMAN, HEAT-TREATING OCCUPATIONS, METAL (metal fab., n.e.c.)

8130-118 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, METAL PROCESSING (iron & steel; non-ferrous metal)

8130-122 FOREMAN, LABOURING AND OTHER ELEMENTAL OCCUPATIONS, METAL PROCESSING (iron & steel; non-ferrous metal)

8130-126 FOREMAN, METAL EXTRUDING AND DRAWING OCCUPATIONS (iron & steel; non-ferrous metal)

8130-134 FOREMAN, METAL ROLLING OCCUPATIONS (iron & steel; non-ferrous metal)

8130-138 FOREMAN, MOULDING, COREMAKING AND METAL CASTING OCCUPATIONS (iron & steel; non-ferrous metal)

8130-142 FOREMAN, PLATING, METAL SPRAYING AND RELATED OCCUPATIONS (metal stamp., press. & coat.)

Foremen: Clay, Glass and Stone Processing, Forming and Related Occupations

8150-110 FOREMAN, CLAY, GLASS AND STONE FORMING OCCUPATIONS (any ind.)

8150-114 FOREMAN, CLAY, GLASS AND STONE FURNACEMEN AND KILNMEN (any ind.)

8150-118 FOREMAN, CLAY, GLASS AND STONE LABOURERS AND OTHER ELEMENTAL WORKERS (any ind.)

8150-122 FOREMAN, CLAY, GLASS AND STONE SEPARATING, CRUSHING, GRINDING AND MIXING OCCUPATIONS (any ind.)

Foremen: Chemicals, Petroleum, Rubber, Plastics and Related Materials Processing Occupations

8160-110 FOREMAN, COATING AND CALENDERING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS (any ind.)

8160-114 FOREMAN, CRUSHING AND GRINDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS (any ind.)

8160-118 FOREMAN, DISTILLING, SUBLIMING AND CARBONIZING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS (any ind.)

8160-122 FOREMAN, FILTERING, STRAINING AND SEPARATING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS (any ind.)

8160-126 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING (any ind.)

8160-130 FOREMAN, LABOURING AND OTHER ELEMENTAL WORK: CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING (any ind.)

8160-134 FOREMAN, MIXING AND BLENDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS (any ind.)

8160-138 FOREMAN, ROASTING, COOKING AND DRYING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS (any ind.)

8160-142 FOREMAN, PILOT PLANT (chem., n.e.c.)

8160-146 FOREMAN, PUMPING AND BLENDING (petrol. & coal prod.)

Foremen: Food, Beverage and Related Processing Occupations

8210-110 FOREMAN, BAKING, CONFECTIONERY-MAKING AND RELATED OCCUPATIONS (bake. prod.; confection.; food & bev., n.e.c.)

CHAPTER 990

- 8210-114 FOREMAN, BEVERAGE-PROCESSING OCCUPATIONS**
(distill., brew. & ferment.; food & bev., n.e.c.)
- 8210-118 FOREMAN, FISH-CANNING, CURING-AND-PACKING OCCUPATIONS** (fish process.)
- 8210-122 FOREMAN, FLOUR-AND-GRAIN-MILLING OCCUPATIONS**
(animal & veg. oil; feed & flour mill; food & bev., n.e.c.)
- 8210-126 FOREMAN, FRUIT-AND-VEGETABLE-CANNING, PRESERVING-AND-PACKING OCCUPATIONS**
(can. & preserv., n.e.c.)
- 8210-130 FOREMAN, INSPECTING, TESTING, GRADING-AND-SAMPLING OCCUPATIONS: FOOD, BEVERAGE AND RELATED PROCESSING**
(distill., brew. & ferment.; food & bev., n.e.c.; whole. trade)
- 8210-134 FOREMAN, LABOURERS AND ELEMENTAL WORKERS: FOOD, BEVERAGE AND RELATED PROCESSING**
(distill., brew. & ferment.; food & bev., n.e.c.)
- 8210-138 FOREMAN, MILK-PROCESSING OCCUPATIONS** (dairy)
- 8210-142 FOREMAN, SLAUGHTERING-AND-MEAT-PACKING OCCUPATIONS**
(slaught. & meat pack.)
- 8210-146 FOREMAN, SUGAR-PROCESSING AND RELATED OCCUPATIONS**
(sugar)

Foremen: Wood Processing Occupations, Except Paper Pulp

- 8230-110 FOREMAN, INSPECTING, TESTING AND GRADING OCCUPATIONS, WOOD PROCESSING**
(sawmill; veneer & plywood; woodworking)
- 8230-114 FOREMAN, LABOURERS AND OTHER ELEMENTAL WORKERS**
(sawmill; veneer & plywood; woodworking)
- 8230-118 FOREMAN, PLYWOOD MAKING AND RELATED OCCUPATIONS**
(veneer & plywood)
- 8230-122 FOREMAN, SAWMILL SAWYERS AND RELATED OCCUPATIONS**
(sawmill)
- 8230-126 FOREMAN, WOOD TREATING , OCCUPATIONS** (woodworking)

Foremen, Pulp and Papermaking and Related Occupations

- 8250-110 FOREMAN, CELLULOSE-PULP-PREPARING OCCUPATIONS**
(pulp & paper)
- 8250-112 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PULP AND PAPERMAKING**
(paper prod.; pulp & paper)
- 8250-114 FOREMAN, LABOURERS AND ELEMENTAL WORKERS**
(pulp & paper)
- 8250-118 FOREMAN, PAPERMAKING AND FINISHING OCCUPATIONS**
(pulp & paper)

Foremen, Textile Processing Occupations

- 8260-110 FOREMAN, TEXTILE BLEACHING AND DYEING OCCUPATIONS**
(knit goods; textile)
- 8260-114 FOREMAN, TEXTILE FIBRE PREPARING OCCUPATIONS**
(syn. fibres; textiles)
- 8260-118 FOREMAN, TEXTILE FINISHING AND CALENDERING OCCUPATIONS**
(knit goods; textile)
- 8260-122 FOREMAN, TEXTILE INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS**
(knit goods; textile)
- 8260-126 FOREMAN, KNITTING OCCUPATIONS** (knit goods)
- 8260-130 FOREMAN, TEXTILE SPINNING AND TWISTING OCCUPATIONS** (textile)
- 8260-134 FOREMAN, TEXTILE WEAVING OCCUPATIONS** (textile)
- 8260-138 FOREMAN, TEXTILE WINDING AND REELING OCCUPATIONS**
(textile)

Foremen, Other Processing Occupations

- 8290-110 FOREMAN, HIDE AND PELT PROCESSING OCCUPATIONS**
(leather tan. & fur dress.)
- 8290-114 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, MISCELLANEOUS PROCESSING** (any ind.)
- 8290-118 FOREMAN, TOBACCO PROCESSING OCCUPATIONS**
(tobacco)

Foremen, Metal Machining Occupations

- 8310-110 FOREMAN, MACHINE-TOOL OPERATORS**
(mach., weld. & forg.)

8310-114 FOREMAN, MACHINISTS AND MACHINE-TOOL SET-UP OCCUPATIONS
(mach., weld. & forg.)

8310-118 FOREMAN, METAL MACHINING, INSPECTION
(mach., weld. & forg.)

8310-122 FOREMAN, TOOL AND DIE
(mach., weld. & forg.; metal fab., n.e.c.)

Foremen, Metal Shaping and Forming Occupations, Except Machining

8330-110 FOREMAN, BOILERMAKERS, PLATERS AND STRUCTURAL METAL WORKERS
(struct., plate & ornam. metal)

8330-114 FOREMAN, FORGING OCCUPATIONS
(mach. weld. & forg.)

8330-118 FOREMAN, METALWORKING-MACHINE OPERATORS, N.E.C.
(any ind.)

8330-122 FOREMAN, SHEET-METAL WORKERS
(metal stamp., press. & coat.)

8330-126 FOREMAN, WELDING AND FLAME CUTTING OCCUPATIONS
(mach., weld. & forg.)

Foremen, Wood Machining Occupations

8350-110 FOREMAN, INSPECTING OCCUPATIONS, WOOD MACHINING
(furn.; woodworking)

8350-114 FOREMAN, PLANING, TURNING, SHAPING AND RELATED WOOD-MACHINING OCCUPATIONS
(furn.; woodworking)

8350-118 FOREMAN, WOOD PATTERNMAKING OCCUPATIONS
(furn.; woodworking)

8350-122 FOREMAN, WOOD SANDING OCCUPATIONS
(furn.; woodworking)

8350-126 FOREMAN, WOOD SAWING AND RELATED OCCUPATIONS, EXCEPT SAWMILL
(furn.; woodworking)

Foremen: Clay, Glass, Stone and Related Materials Machining Occupations

8370-110 FOREMAN, ABRADING AND POLISHING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS
(any ind.)

8370-114 FOREMAN, CUTTING AND SHAPING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS
(any ind.)

Foremen, Other Machining and Related Occupations, n.e.c.

8390-110 FOREMAN, ENGRAVERS, ETCHERS AND RELATED OCCUPATIONS (any ind.)

8390-114 FOREMAN, FILING, GRINDING, BUFFING, CLEANING AND POLISHING OCCUPATIONS, N.E.C. (any ind.)

8390-118 FOREMAN, PATTERNMAKERS AND MOULDMAKERS, N.E.C.
(any ind.)

Foremen, Fabricating and Assembling Occupations, Metal Products, n.e.c.

8510-110 FOREMAN, AIRCRAFT ASSEMBLY
(air & space-craft)

8510-114 FOREMAN, BUSINESS AND COMMERCIAL MACHINES ASSEMBLY (mech. equip., n.e.c.)

8510-118 FOREMAN, ENGINE ASSEMBLY
(mech. equip., n.e.c.)

8510-122 FOREMAN, INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY ASSEMBLY
(mech. equip., n.e.c.)

8510-126 FOREMAN, METAL PRODUCTS INSPECTION AND TESTING
(any ind.)

8510-130 FOREMAN, MOTOR VEHICLE ASSEMBLY (motor vehicle)

8510-134 FOREMAN, PRECISION INSTRUMENTS AND RELATED EQUIPMENT ASSEMBLY
(scient. & ind. equip., n.e.c.)

Foremen: Fabricating, Assembling, Installing and Repairing Occupations, Electrical, Electronic and Related Equipment

8530-110 FOREMAN, ELECTRICAL AND ELECTRONIC INSPECTION
(electric. equip.; electronic equip.)

8530-118 FOREMAN, ELECTRICAL EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS (electric. equip.)

8530-122 FOREMAN, ELECTRICAL EQUIPMENT INSTALLATION AND REPAIR (electric. equip.)

8530-126 FOREMAN, ELECTRONIC EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS (electronic equip.)

CHAPTER 990

8530-130 FOREMAN, ELECTRONIC EQUIPMENT INSTALLATION AND REPAIR
(air trans.; electronic equip.)

8530-134 FOREMAN, RADIO AND TELEVISION REPAIR
(electronic equip.)

Foremen: Fabricating, Assembling and Repairing Occupations, Wood Products

8540-110 FOREMAN, CABINET AND WOOD FURNITURE MAKERS
(furn.; woodworking)

8540-114 FOREMAN, INSPECTING AND GRADING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, WOOD PRODUCTS (furn.)

Foremen: Fabricating, Assembling and Repairing Occupations, Textile, Fur and Leather Products

8550-110 FLOORLADY, MILLINERY
(garment & fabric)

8550-114 FOREMAN, DRESSMAKERS
(garment & fabric; ret. trade)

8550-118 FOREMAN, FURRIERS (fur goods)

8550-122 FOREMAN, HAT AND CAP MAKERS (garment & fabric)

8550-126 FOREMAN, INSPECTING, GRADING AND SAMPLING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS
(any ind.)

8550-130 FOREMAN, PATTERNMAKING, MARKING AND CUTTING OCCUPATIONS
(garment & fabric)

8550-134 FOREMAN, SEWING-MACHINE OPERATORS (garment & fabric)

8550-138 FOREMAN, SHOE MAKING AND REPAIRING OCCUPATIONS
(shoes)

8550-142 FOREMAN, TAILORS
(garment & fabric; ret. trade)

8550-146 FOREMAN, UPHOLSTERERS
(furn.)

Foremen: Fabricating, Assembling and Repairing Occupations, Rubber, Plastic and Related Products

8570-110 FOREMAN, BELT BUILDING
(rubber)

8570-114 FOREMAN, HOSE BUILDING
(rubber)

8570-118 FOREMAN, INSPECTING RUBBER, PLASTIC AND RELATED MATERIALS PRODUCTS
(plastic prod.; rubber)

8570-122 FOREMAN, PLASTIC PRODUCTS FABRICATING, ASSEMBLING AND REPAIRING (plastic prod.)

8570-126 FOREMAN, RUBBER PRODUCTS FABRICATING, ASSEMBLING AND REPAIRING (rubber)

8570-130 FOREMAN, TIRE BUILDING
(rubber)

8570-134 FOREMAN, TIRE INSPECTION
(rubber)

8570-138 FOREMAN, TIRE STOCK PREPARATION (rubber)

Foremen: Mechanics and Repairmen, n.e.c.

8580-110 FOREMAN: AIRCRAFT MECHANICS AND REPAIRMEN
(air & space-craft)

8580-114 FOREMAN: INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY MECHANICS AND REPAIRMEN (mech. equip., n.e.c.)

8580-118 FOREMAN: MECHANICAL-EQUIPMENT-REPAIR INSPECTORS
(mech. equip., n.e.c.)

8580-122 FOREMAN: MOTOR VEHICLE MECHANICS AND REPAIRMEN
(motor vehicle)

8580-126 FOREMAN: OFFICE-MACHINE REPAIRMEN
(misc. prod. fab., n.e.c.)

8580-130 FOREMAN: PRECISION INSTRUMENT MECHANICS AND REPAIRMEN
(scient. & ind. equip., n.e.c.)

8580-134 FOREMAN: RAIL TRANSPORT EQUIPMENT REPAIRMEN
(rail. rolling stock)

8580-138 FOREMAN: WATCH AND CLOCK REPAIRMEN
(scient. & ind. equip., n.e.c.)

Foremen: Product Fabricating, Assembling and Repairing Occupations, n.e.c.

8590-110 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C. (any ind.)

8590-114 FOREMAN, JEWELLERY AND SILVERWARE WORKERS
(jewellery & precious metal prod.)

8590-118 FOREMAN, MARINE CRAFT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS
(ship & boat bldg.)

8590-122 FOREMAN, PAINTING AND DECORATING OCCUPATIONS, EXCEPT CONSTRUCTION
(any ind.)

8590-126 FOREMAN, PAPER PRODUCT FABRICATING AND ASSEMBLING OCCUPATIONS
(paper prod.)

8590-130 DOCKMASTER (ship & boat bldg.)

8590-134 FOREMAN, MARINE SERVICE
(ship & boat bldg.)

Foremen, Excavating, Grading, Paving and Related Occupations

8710-110 FOREMAN, EXCAVATING, GRADING AND RELATED OCCUPATIONS (construction)

8710-114 FOREMAN, PAVING, SURFACING AND RELATED OCCUPATIONS (construction)

8710-118 FOREMAN, RAILWAY SECTIONMEN AND TRACKMEN (construction)

Foremen: Electrical Power, Lighting and Wire Communications

Equipment Erecting, Installing and Repairing Occupations

8730-110 FOREMAN, CONSTRUCTION ELECTRICIANS AND REPAIRMEN (construction)

8730-114 FOREMAN, ELECTRICAL-POWER LINEMEN AND RELATED OCCUPATIONS (elec. power)

8730-118 FOREMAN, TELEPHONE AND TELEGRAPH INSTALLATION (telecom.)

8730-122 SUPERVISOR, ELECTRIC-POWER INSPECTORS AND TESTERS (elec. power)

Foremen, Other Construction Trades Occupations

8780-110 FOREMAN, BRICK AND STONE MASONS AND TILE SETTERS (construction)

8780-114 FOREMAN, CARPENTERS AND RELATED WORKERS (construction)

8780-118 FOREMAN, CONCRETE FINISHERS AND RELATED WORKERS (construction)

8780-122 FOREMAN, CONSTRUCTION INSPECTORS (construction)

8780-126 FOREMAN, GLAZIERS (construction)

8780-130 FOREMAN, INSULATORS (construction)

8780-134 FOREMAN, LABOURERS AND OTHER ELEMENTAL WORKERS (construction)

8780-138 FOREMAN, PAINTERS, PAPERHANGERS AND RELATED WORKERS (construction)

8780-142 FOREMAN, PLASTERERS AND RELATED WORKERS (construction)

8780-146 FOREMAN, PIPE FITTERS, PLUMBERS AND RELATED WORKERS (construction)

8780-150 FOREMAN, STRUCTURAL-METAL ERECTORS (construction)

8780-154 FOREMAN, ROOFERS AND WATERPROOFERS (construction)

8780-158 BUILDING MOVER (construction)

Foremen, Air Transport Operating Occupations

9110-110 FOREMAN, AIR TRANSPORT OPERATING SUPPORT OCCUPATIONS (air trans.)

9110-114 SUPERVISOR, AIR PILOTS AND NAVIGATORS (air trans.)

Foremen, Railway Transport Operating Occupations

9130-110 FOREMAN, RAILWAY TRANSPORT OPERATING SUPPORT OCCUPATIONS (rail trans.)

9130-114 TRAINMASTER (rail trans.)

9130-118 STATION MASTER (rail trans.)

Foremen, Motor Transport Operating Occupations

9170-110 FOREMAN, BUS DRIVERS (motor trans.)

9170-114 FOREMAN, TAXI DRIVERS AND CHAUFFEURS (motor trans.)

9170-118 FOREMAN, TRUCK DRIVERS (motor trans.)

Foremen, Other Transport and Related Equipment Operating Occupations

9190-110 FOREMAN, MOTORMEN AND DINKEYMEN, EXCEPT RAIL TRANSPORT (mining & quarrying)

Foremen: Material-Handling and Related Occupations, n.e.c.

9310-110 FOREMAN, HOISTING OCCUPATIONS N.E.C. (any ind.)

9310-114 FOREMAN, LABOURERS AND ELEMENTAL WORKERS, MATERIAL-HANDLING (any ind.)

9310-118 FOREMAN, LONGSHOREMEN, STEVEDORES AND FREIGHT HANDLERS (any ind.)

CHAPTER 990

9310-122 FOREMAN, MATERIAL-
HANDLING EQUIPMENT
OPERATORS, N.E.C. (any ind.)

9310-126 FOREMAN, PACKAGING
OCCUPATIONS, N.E.C.
(any ind.)

Foremen, Printing and Related Occupations

9510-110 FOREMAN, BOOKBINDING AND
RELATED OCCUPATIONS
(print. & pub.)

9510-114 FOREMAN, PHOTOENGRAVING
AND RELATED OCCUPATIONS
(print. & pub.)

9510-118 FOREMAN, PRINTING-
ENGRAVING, EXCEPT
PHOTOENGRAVING
OCCUPATIONS (print. & pub.)

9510-122 FOREMAN, PRINTING PRESS
OCCUPATIONS (print. & pub.)

9510-126 FOREMAN, STEREOTYPING AND
ELECTROTYPING
OCCUPATIONS (print. & pub.)

9510-130 FOREMAN, TYPESETTING AND
COMPOSING OCCUPATIONS
(print. & pub.)

Foremen, Stationary Engine and Utilities Equipment Operating and Related Occupations

9530-110 FOREMAN, POWER-STATION
OPERATORS (elec. power)

9530-114 FOREMAN, STATIONARY ENGINE
AND AUXILIARY EQUIPMENT
OPERATING OCCUPATIONS
(elec. power; utilities, n.e.c.)

9530-118 FOREMAN, WATER AND
SANITATION UTILITIES
EQUIPMENT OPERATING
OCCUPATIONS
(utilities, n.e.c.; waterworks)

9530-122 FOREMAN, PUMPING AND
PIPELINE EQUIPMENT
OPERATING OCCUPATIONS
(any ind.)

Foremen, Electronic and Related Communications Equipment Operating Occupations, n.e.c.

9550-110 SUPERVISOR, RADIO AND
TELEVISION BROADCASTING
EQUIPMENT OPERATORS
(broadcast., motion pic. & stage)

9550-114 SUPERVISOR, SOUND
RECORDING AND
REPRODUCTION EQUIPMENT
OPERATORS
(broadcast., motion pic. & stage)

9550-118 SUPERVISOR, TELEGRAPH
OPERATORS (telecom.)

Foremen, Other Crafts and Equipment Operating Occupations, n.e.c.

9590-110 FOREMAN, PHOTOGRAPHIC
PROCESSING OCCUPATIONS
(broadcast., motion pic. & stage;
misc. serv.)

QUALIFICATIONS PROFILES

Administrative Foremen

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	4	<u>3</u>	4	4	4	4	4	5	5		S-M 567	I-B 34567	5-3	8-5	59	4501
<u>2</u>		3	4	3	3				4	4							

Working Foremen

Aptitudes												PA	EC	GED	SVP	Ints.	Temps.
G	V	N	S	P	Q	K	F	M	E	C							
<u>3</u>	<u>3</u>	3	<u>3</u>	<u>3</u>	4	<u>3</u>	<u>4</u>	<u>3</u>	4	4		L-H 234567	I-B 34567	5-3	8-5	95	4501Y
<u>2</u>		4	<u>2</u>	<u>2</u>	3	<u>4</u>	<u>3</u>	<u>4</u>	5	5							
									3	3							

APTITUDES AND CAPACITIES

Foremen require:

- learning ability to understand and effectively apply supervisory principles and practices and the techniques appropriate to the field of work supervised;

- verbal ability to communicate effectively with superiors and subordinates and to understand work orders;
- spatial perception to understand the functional nature of machines and equipment and to interpret technical drawings.

Working Foremen also require:

- form perception to discern pertinent detail in things and objects such as drawings and finished products;
- eye-hand co-ordination, and finger and manual dexterity to operate machines and equipment and to use tools;

- capacity to perform medium to heavy work, requiring the lifting of one hundred pounds maximum and carrying objects weighing up to fifty pounds.

TRAINING AND ENTRY REQUIREMENTS

Foremen normally require ten to fourteen years of general or technical education with varying amounts of successful lower level job experience in similar fields. Some companies may accept less than ten years of formal education where the employee has demonstrated initiative, work ability and leadership qualities in lower level jobs.

Working Foremen usually enter into supervisory work from the worker ranks, since demonstrated skill in a particular field of work is very

important. Training as a foreman may be given by the employer, either on the job or in formalized courses. The employee may also require training on his own initiative in technical or other schools.

Administrative Foremen are commonly selected from outstanding personnel in a particular work field and previous experience and training in more than one field of work frequently enhances entry prospects. Depending on the occupational area, the foreman may be required to possess a licence or a certificate of competency.

ADVANCEMENT AND TRANSFER POSSIBILITIES

Advancement

Foremen, who possess the necessary qualifications, may advance to positions of greater responsibility such as superintendents, general foremen and supervisors of foremen.

Transfer

Some foremen may transfer to other occupations in similar supervisory unit groups and work areas within Foremen Unit Groups 7180 through 9910 in Volume I, provided they have the necessary education, training and experience. In some instances transfer may be to appropriate inspecting and testing occupations classified in the same minor group as the supervisory occupation.

CLUES FOR RELATING PERSONS TO OCCUPATIONAL REQUIREMENTS

Persons seeking entry into foremen occupations require significant interests in, and dispositions for work involving the following:

Interests

- work resulting in prestige or the esteem of others;
- work which is basically non-social in nature and is carried on in relation to processes, machines and techniques.

Temperaments

- the direction, control and planning of an entire activity or the activities of others;
- dealing with people in actual job duties beyond giving and receiving instructions; the evaluation of information against measurable or verifiable criteria such as ascertaining and ensuring that the quality of work meets established standards;
- a variety of duties often characterized by frequent change.

Additionally, for Working Foremen:

- the precise attainment of set limits, tolerances or standards.

OTHER REQUIREMENTS

- ability to maintain harmony in working relationships among workers and to motivate others;
- ability to demonstrate a sound, technical knowledge and to inspire confidence;
- initiative and drive;
- good physical condition;
- evidence of leadership and demonstrated success in a non-supervisory job.

GROUP 9916

INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, N.E.C.

This group includes occupations, not elsewhere classified, concerned with quality-control activities that cannot be properly classified in preceding groups, or whose activities are related to more than one group; for example, non-destructive testers concerned with testing a variety of products are classified in this group.

OCCUPATIONAL TITLES		QUALIFICATIONS PROFILES FOR INDIVIDUAL OCCUPATIONS													
		Aptitudes										PA	EC	GED	SVP
		G	V	N	S	P	Q	K	F	M	E	C	Ints.	Temps.	
<i>Non-Destructive Testing Occupations</i>															
9916-110	RADIOGRAPHER, INDUSTRIAL (prof. & tech., n.e.c.)	<u>2</u>	3	<u>3</u>	<u>3</u>	<u>3</u>	3	<u>4</u>	<u>4</u>	<u>4</u>	4	4	L 47	I 6	4 6 971 09Y
9916-114	TESTER, ULTRASONIC (prof. & tech., n.e.c.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	3	<u>4</u>	<u>4</u>	<u>3</u>	5	4	M 47	I 7	4 6 971 0Y
9916-118	TESTER, FLUOROSCOPIC (prof. & tech., n.e.c.)	<u>3</u>	3	3	<u>3</u>	<u>3</u>	3	<u>4</u>	<u>4</u>	<u>3</u>	5	4	L 47	I 6	3 5 91 0Y
9916-122	TESTER, EDDY-CURRENT (prof. & tech., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>4</u>	<u>4</u>	<u>3</u>	4	4	L 47	I	3 4 91 0Y2
9916-126	TESTER, MAGNETIC (prof. & tech., n.e.c.)	<u>3</u>	4	4	3	<u>3</u>	4	<u>3</u>	3	<u>3</u>	5	4	M 47	I	3 4 91 0Y2
9916-130	TESTER, DYE PENETRANT (prof. & tech., n.e.c.)	<u>3</u>	4	4	<u>3</u>	<u>3</u>	4	<u>3</u>	4	<u>3</u>	5	4	L 347	I 6	3 4 91 0Y2
<i>Miscellaneous Inspecting, Testing, Grading and Sampling Occupations</i>															
9916-150	PRESSURE TESTER (any ind.)	3	4	4	4	<u>3</u>	4	<u>3</u>	4	<u>3</u>	4	5	M 347	I 4	3 4 91 0Y2

GUIDE TO QUALIFICATIONS PROFILE FACTORS

APTITUDES

- G General Intelligence
- V Verbal Ability
- N Numerical Ability
- S Spatial Perception
- P Form Perception
- Q Clerical Perception
- K Motor Co-ordination
- F Finger Dexterity
- M Manual Dexterity
- E Eye-Hand-Foot Co-ordination
- C Colour Discrimination

Aptitude Levels

(in terms of working population)

- 1 Upper 10%
 - 2 Upper Third exclusive of the Highest 10%
 - 3 Middle Third
 - 4 Lowest Third exclusive of the Lowest 10%
 - 5 Lower 10%
- When these levels are underlined, they are considered significant for satisfactory job performance.

PHYSICAL ACTIVITIES (PA)

- 1. Strength (lifting, carrying, pushing, pulling) shown in terms of:
S - Sedentary work (10 lbs. max)
L - Light Work (20 lbs. max)
M - Medium work (50 lbs. max)
H - Heavy Work (100 lbs. max)
VH - Very Heavy Work (over 100 lbs.)
- 2. Climbing and/or Balancing
- 3. Stooping, Kneeling, Crouching and/or Crawling
- 4. Reaching, Handling, Fingering and/or Feeling
- 5. Talking
- 6. Hearing
- 7. Seeing in terms of: acuity far and near, depth perception, accommodation, colour vision and field of vision.

ENVIRONMENTAL CONDITIONS (EC)

- 1. Work Location
I - Inside
O - Outside
B - Both
- 2. Extremes of cold plus temperature changes
- 3. Extremes of heat plus temperature changes
- 4. Wet and/or humid
- 5. Noise and/or vibration
- 6. Hazards in terms of:
- mechanical
- electrical
- burns
- explosives
- radiant energy
- 7. Atmospheric Conditions in terms of:
- fumes
- odours
- dusts
- mists
- gases
- poor ventilation

GENERAL EDUCATION DEVELOPMENT (GED)

<u>Levels</u>	<u>Approximate Duration of Schooling</u>
6	- 17 years plus
5	- 13 to 16 years
4	- 11 to 12 years
3	- 9 to 10 years
2	- 6 to 8 years
1	- Up to 6 years

SPECIFIC VOCATIONAL PREPARATION (SVP)

- | | |
|--|---|
| <ul style="list-style-type: none"> 1 - Short Demonstration Only 2 - Anything Beyond short demonstration up to and including 30 days 3 - Over 30 days up to and including 3 months 4 - Over 3 months up to and including 6 months | <ul style="list-style-type: none"> 5 - Over 6 months up to and including 1 year 6 - Over 1 year up to and including 2 years 7 - Over 2 years up to and including 4 years 8 - Over 4 years up to and including 10 years 9 - Over 10 years |
|--|---|

INTEREST FACTORS

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> 1. Things and Objects 2. Business Contact with People 3. Routine, concrete and organized work 4. Working for people for their presumed good as in the social welfare sense, or for dealing with people and language in social situations. 5. Work resulting in prestige or esteem of others | <p>vs.</p> <p>vs.</p> <p>vs.</p> <p>vs.</p> <p>vs.</p> | <ul style="list-style-type: none"> 6. People and Communication of Ideas 7. Scientific and Technical Work 8. Abstract and creative work or experiences 9. Non-social work, carried on in relation to processes, machines, and techniques 0. Work resulting in tangible, productive satisfaction |
|---|--|---|

TEMPERAMENT FACTORS

- | | |
|--|---|
| <ul style="list-style-type: none"> 1. Variety and Change 2. Repetitive, Short Cycle 3. Under Specific Instructions 4. Direction, Control, Planning 5. Dealing with People 6. Isolation | <ul style="list-style-type: none"> 7. Influencing People 8. Performing Under Stress 9. Sensory or Judgmental Criteria 0. Measurable or Verifiable Criteria X. Interpretation of ideas, facts, feelings Y. Precise attainment of set limits, tolerances or standards |
|--|---|

ACKNOWLEDGEMENTS – CCDO OFFICERS

The following persons who made a substantial contribution to the successful completion of the Canadian Classification and Dictionary of Occupations, is gratefully acknowledged.

A. Akehurst
F. Aquanno
G. Barnes
R. Bennett
F. Bertrand
A. Bonner
F. Brault
R. Brunt
D. Charron
M. Clarke
C. Conway
F. Dowe
L. Dixon
C. Gagnon
O. Gomond
G. Goulard
J. Hamel
W. Harle

H. Hayes
P. Hrabec
L. Hunter
W. Hurley
K. Johnston
J. Jones
C. Kearns
L. Kniffen
D. Knowles
G. Lambert
F. Levin
J. Lloyd
H. MacLeod
K. Marsden
T. Mascaro
S. McMillan
A. Meyer
M. Miller
R. Misener

A. Morico
J. Murray
B. Neale
R. Nizich
J. Nobel
M. O'Leary
J. O'Neill
R. Perry
N. Quinn
G. Robertson
J. Scott
J. Sobkow
S. Staniforth
J. Walters
G. Warbrick
J. Ward
H. Warman
H. Woods

